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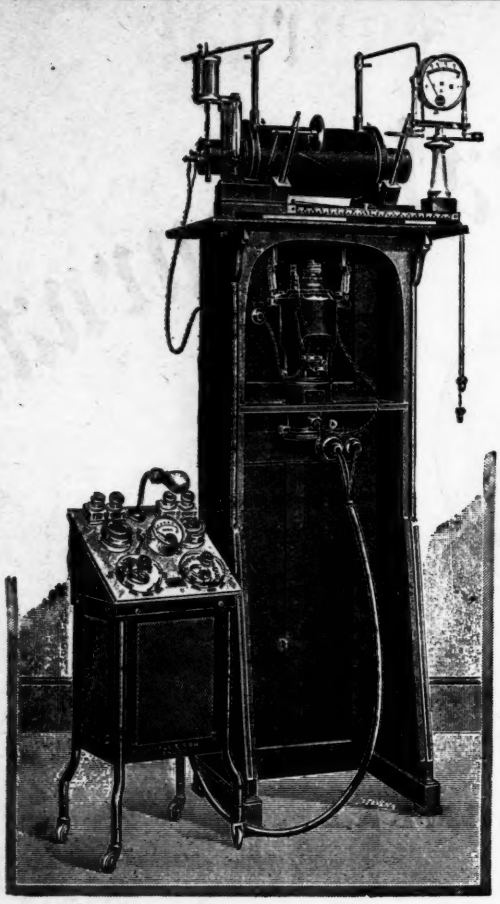

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ON

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A LIVING organism, like a spinning top, is only in equilibrium because it keeps going. But, unlike a top, it is provided with delicate mechanisms for readjusting its balance should this be disturbed. Disease is the resultant of the action of some external force and the reaction of the body. The reaction may be adequate to restore equilibrium to its former position—that is, a return to health; or the external force may be sufficient to overthrow the balance altogether—that is, death ensues. But short of these extremes a new though inferior position of equilibrium may be attained—that is, more or less compensation is acquired. In this new inferior position the machinery works with more friction, and the reserves are thereby reduced. Thus the body works best at a temperature of 98.4°, with five million red corpuscles per cubic millimetre, with a gastric juice of 0.2 per cent. HCl, and alveolar air containing 5 per cent. CO_2, and blood containing 0.1 per cent. of sugar, though capable of working with figures considerably in excess or defect of these. In this regulation of balance the endocrine glands play an important part. Broadly they fall into two groups, the accelerators and the retarders of metabolism. In general terms, the accelerating endocrine glands are controlled by the sympathetic and the retarding co-operate with the parasympathetic. These constitute the two divisions of the lowest level of the nervous system—the visceral, vegetative, or autonomic system, which, acting apart from the will and normally without exciting sensation, subserves the functions of organic life. The sympathetic is katabolic in its activity, converting the reserves of the body into kinetic energy, and defensive in its manifestations, while the parasympathetic is anabolic, building up reserves.

The sympathetic is militant, the parasympathetic peaceful. Emotions which in the primitive state activate us for fight or flight do so through the sympathetic. One of the most important steps in this mobilization concerns the blood sugar. Active muscles consume three and a half times as much sugar as resting muscles, so that it is not surprising to find that sympathetic stimulation leads to increase of the sugar in the blood. This it apparently does partly through the thyroid, pituitary, and adrenals. The close association between endocrine glands and the sympathetic is most clearly seen in the case of the adrenals. In the worms there are cells in the central nervous system which are the common ancestors of both the sympathetic ganglion and the adrenalin-secreting cell. In the lowest vertebrate, the lamprey, the sympathetic cells are scanty, but there is a wide distribution of adrenalin-secreting cells (J. F. Gaskell). As evolution proceeds these secreting cells gradually give way to an increasing development of the sympathetic system, so that ultimately their only surviving remnant is the medulla of the adrenals. Not only is this medulla stimulated to secretion by the sympathetic, but in its turn it increases the sympathetic response. Stimulation of the sympathetic or injection of adrenalin, therefore, alike increase the blood sugar and lower carbohydrate tolerance. There is a similar correlation between the sympathetic and the thyroid. The effect of the pituitary in increasing the blood sugar and lowering carbohydrate tolerance is proved, as is the effect of sympathetic stimulation in increasing its secretion, but the converse effect of its secretion on the sympathetic has not been shown.

The effect of the parasympathetic in building up reserves is seen particularly in its action on the assimilation of food. It plays the chief part, both directly and indirectly, in providing the digestive juices and in maintaining the due tone necessary to peristaltic movements. Now one of the digestive glands, the pancreas, not only provides a powerful external secretion, but it supplements this by an internal secretion which leads to the building up of ingested sugar into more complex colloid combinations, which enable it to escape excretion by the kidney, thus increasing carbohydrate tolerance. In passing, we may note the advantageous position in the circulation where the pancreas pours this secretion into the blood stream, side by side with the dextrose absorbed from the alimentary tract. We may surmise that some of the absorbed sugar is at once stored in the liver as glycogen, while by means of this internal secretion of the pancreas the rest is built up through a series of increasingly stable colloid combinations into the tissue cells. Support can be adduced for this surmise in two facts—one that the sugar in normal blood behaves like a colloid and the other that the pancreatic internal secretion is much less effective if introduced at any other part of the circulation than the portal vein.

Now, whenever sympathetic and parasympathetic fibres are distributed to the same structures they are antagonistic in function. The pancreas is not as much under nervous control as some other glands, but, so far as the evidence goes, it points to the vagus having a secretory effect upon it, although it is true that in large part its secretion is excited by chemical means. It would be in accordance with this general plan for the sympathetic to be inhibitory to the pancreas, both for its external and internal secretions, and it would therefore appear that sympathetic stimulation would increase blood sugar and lower carbohydrate tolerance both by stimulating the accelerating or katabolic glands and by checking the anabolic gland. My first generalization is then:

> *The sympathetic mobilizes the sugar into the blood by means of the endocrine glands, for purposes of defence, while the parasympathetic stores it in the tissues as a reserve.*

Sugar serves three useful purposes in the body: it can be stored in the liver as glycogen, or in various tissues as fat, or it can be utilized at once as a source of muscular energy. If these three methods are inadequate, some will appear in the urine. Recent work has shown that we get a much more accurate idea of what is happening by examination of the sugar in the blood than in the urine. I have given the normal level of the blood sugar as 0.1 per cent. It rises within about ten minutes of drinking a solution containing sugar, and more gradually after eating starch, to about 0.14 per cent. If it rises above this point an overflow is likely to occur into the urine. This Graham has called the "leak-point," and it varies in different individuals. In some it is abnormally low. Such persons constantly pass about 1 to 2 per cent. of sugar, whatever the diet. Their glycosuria is non-progressive and causes no symptoms, being only discovered on routine examination. There may be other evidence of a renal lesion, more often there is not. Such a condition has been compared to the glycosuria temporarily induced by injecting phloridzin, when the kidney actively secretes sugar. A glycosuric of the ordinary type who only passes 1 to 2 per cent. of sugar on a mixed diet might be expected to pass none on a strict diet. But these cases continue to do so, and can therefore often be recognized without the aid of an estimation of the blood sugar. Strict diet appears to do them harm.

I recently saw an interesting variation from this type. A lady, aged 52, was known to have had glycosuria for twelve years. Sometimes she had dieted, sometimes not—it made little difference to her health; if anything, she was better on a mixed diet. Her blood sugar was 0.061 per cent. On strict diet she generally passed some sugar, and she also developed acetonuria. As a result of strict dieting her blood sugar rose to 0.19 per cent., and on giving her 25 grams of dextrose it rose to a maximum of 0.36 per cent. in half an hour. Yet she only excreted 4 grams of the 25 grams given her. Now, this shows that she could assimilate sugar, but that the effect of dieting was actually to push her leak-point up. This would appear to be an attempt on the part of the body to prevent the escape of a valuable foodstuff. Seeing that I was actually producing a hyperglycaemia by dieting I abstained from further treatment which was likely to do harm; I allowed starches freely, which would enter the blood gradually, and merely prohibited sugar as such.

An ordinary diabetic shows an excess of sugar in the blood—a usual figure is 0.25 per cent., but it may rise to 0.3 or 0.4. Even when he has been freed from glycosuria

* Delivered to the Sussex Branch.

the blood sugar may remain as high as 0.25. Yet, as we have seen, a normal individual will leak sugar somewhere about 0.15, so that the kidney must raise its leak-point in diabetes. Here again it seems there must have been an attempt to establish a new position of equilibrium and to prevent escape of foodstuff. It may be asked, In what respect is such an individual in an inferior position to the normal? Why is 0.1 per cent. the optimum blood sugar content? Apparently the 0.1 per cent. is carried in combination, whereas sugar in excess of this amount is in simple solution. To carry an excess of crystalloid in simple solution has certain definite drawbacks—it alters the osmotic pressure of the body fluids, which may, for instance, damage the translucency of the crystalline lens; may infiltrate the nerves, causing interstitial neuritis; and provide a pabulum for septic organisms, producing boils and carbuncles. All these seem to be the direct results of hyperglycaemia. I have even known gangrene occur in a diabetic during a time when he was free from glycosuria but still had hyperglycaemia. In the same way any wide departure from the optimum five million red corpuscles per cubic millimetre produces disturbances. If much below this figure, insufficient haemoglobin is carried for the needs of the organism; if much in excess, the viscosity of the blood is raised so much that the circulation is seriously slowed. Indeed, if the new figures were better than the old they would tend to replace them in evolution.

If we seek for the explanation of the difference between free and combined sugar we must turn again to the pancreas. Its internal secretion acts like an amboceptor joining the sugar to larger molecules such as protein. Normally there are enough of them to carry 0.1 per cent. of sugar in this way. If there is more sugar than this to be carried in the blood, overflow occurs; though this may be diminished by raising the leak-point. But if the pancreatic secretion is inadequate, less sugar is carried in the combined form and glycosuria occurs on an ordinary diet. There is thus no hard and fast line between simple alimentary glycosuria and "total" diabetes when no sugar is assimilated. It is merely a question of the relation between the pancreatic amboceptor and the needs of the body.

In health there is quite sufficient amboceptor to deal with an ordinary diet, though if 150 to 200 grams of dextrose are given at one time some will appear in the urine. But this is an amount which no one will voluntarily take, and the administration of such an amount may provoke its rejection by vomiting. The capacity of the pancreatic internal secretion thus has a definite limit, and if other agencies tend to keep up a persistently high level of blood sugar overflow will occur. Such agencies exist, as we have seen, in the adrenals, thyroid, and pituitary.

We may next inquire whether a similar antagonism between this group and the pancreas can be shown to exist in respect of their other functions. To a certain extent it can. Thus Pemberton and Sweet showed that removal of the adrenals was followed by a continuous flow of pancreatic juice, which could be temporarily inhibited by injection of suprarenal extract. Again, it is well known that adrenalin dilates the pupil of an excised eye, but not of the intact eye of a normal individual. Therefore something inhibits the adrenalin effect. Now, Loewi found that in a depancreatized dog adrenalin did dilate the pupil. He therefore suggested the instillation of adrenalin into the eye as a test for pancreatic insufficiency. Though not infallible, it is a useful aid to diagnosis. A drop of the 1 in 1,000 solution is put into the right conjunctival sac, five minutes later it is repeated, and dilatation of the pupil, often eccentric in form, is looked for between twenty minutes and one hour afterwards. If this reaction is positive, it is certainly suggestive of pancreatic insufficiency. But it may also be present in hyperthyroidism, suggesting that the thyroid excess inhibits pancreatic activity, allowing adrenalin to show its dilator action unchecked.

It must be admitted that the ordinary case of diabetes shows no evidence of endocrine disease, and conversely if endocrine disease is present it presents other manifestations besides altered sugar tolerance. Allen, who strongly upholds the pancreatic theory of diabetes, admits that the disease may reach a fatal issue and yet the pancreas be as good as normal. And more recently he has stated that the hydropic degeneration of the cell islets of the pancreas which has been observed may be the result and not the cause of diabetes. He inclines, that is to say, to the view that diabetes shows itself *through* the pancreas, rather than that it is a disease *of* the pancreas. And he is prepared to accept a nervous origin for this pancreatic insufficiency.

If there is organic disease of the pancreas we should expect to find other signs besides glycosuria. The comparative value of these signs has recently been fully discussed by Sir Archibald Garrod in his Schorstein lecture. It will be sufficient if I say here that the signs on which I have learned to rely most are:

(1) An excess of unsplit fat in the stools—since the pancreas provides the lipase for fat-splitting.

(2) A high diastase content in the urine—since if there is any obstruction to the outflow of pancreatic juice excess of pancreatic diastase will be reabsorbed into the urine and show its presence by the digestion of an unduly large amount of starch paste. (For technique see Corbett, *Quarterly Journal of Medicine*, 1913, vol. 6, page 351.)

To these I might add (3) the adrenalin eye test.

If these three tests were positive and glycosuria were present the diagnosis of pancreatic disease might safely be made. Jaundice would further suggest that the head of the gland was involved in the process, while severe pain would suggest pressure on the nerves. In acute disease of the pancreas the eye test would probably be positive and the diastase in the urine be very high—say, 300 to 500 units, as against the normal 10 to 30. The pain would probably be agonizing and cause inhibition of intestinal peristalsis, with resulting obstruction. But glycosuria only occasionally occurs in such cases. With a chronic obstruction to the head of the gland, such as a new growth, the eye test would probably be positive and the diastase moderately raised, say, 50 to 150 units, but pain would not be at all a marked feature. Jaundice would be present, but not glycosuria. It is in a chronic inflammatory lesion of the whole pancreas that glycosuria might be expected, but then there would also be a positive eye test, a moderately raised diastase output in the urine, fatty stools, and probably some jaundice. Now all these other symptoms are usually lacking in diabetes, where the glycosuria remains the only symptom we can attribute to the pancreas. We must therefore look further afield for an explanation of diabetes.

That thyroid extract will excite glycosuria is well known. Graves's disease is accompanied by lowered sugar tolerance and sometimes by actual glycosuria, while in myxoedema the sugar tolerance is much increased. Only last week a girl of 25 was sent to see me with a history of thyroid enlargement for the last four or five years, which had increased recently. There was no exophthalmos and no tremors, but the pulse was 100. At the beginning of the illness she had unfortunately been treated with thyroid extract. In March, 1920, she was noticed to be wasting rapidly, and on routine examination glycosuria was found. Even after restricted diet this amounted on June 2nd to 2,800 grains a day. There was also pronounced acetonuria. The hyperglycaemia was well marked, the blood sugar amounting to 0.308 per cent.—that is, three times the normal. This would appear to be a glycosuria of thyroid origin, but it only differed from ordinary diabetes in showing other definite endocrine symptoms. My impression is that giving thyroid extract may have helped to tip the balance towards diabetes by increasing katabolism and hyperglycaemia.

In a similar way oversecretion by the pars intermedia of the pituitary lowers sugar tolerance and may excite glycosuria. The following are examples:

A man of 33 came under my care in hospital for glycosuria which was accompanied by a right ophthalmoplegia and left-sided facial paralysis. There was severe headache and occasional vomiting. The last two symptoms suggested increased intracranial pressure, though he had no optic neuritis then. A gummatous meningitis involving the base of the brain, and including the pituitary, seemed the most probable diagnosis. In confirmation of this the Wassermann reaction was found to be strongly positive. While under treatment his headache, vomiting, and cranial palsies cleared up, and his carbohydrate tolerance rose to more than 100 grams. Unfortunately he relapsed some months later, and developed right hemiplegia, apparently due to endarteritis of the middle cerebral.

Quite lately I saw an officer who in 1915 had been hit on the forehead by a fragment of high explosive shell which entered the orbit. There seems to have been a free escape of cerebro-spinal fluid from the nose. An attempt to remove the fragment by operation had been unsuccessful. A skiagram pointed to some damage to the posterior wall of the frontal sinus and the left frontal lobe. Two years later he began to show some failure of mental concentration and was occasionally odd in his manner. Two years after this he began to have fits, starting in the muscles of the right side of the face. He seemed dazed in the fits, but did not entirely lose consciousness. He was found to have 8 to 10 per cent. of sugar in the urine, and his blood sugar was at the upper limit of normal, 0.15 per cent. The left visual field was found to be defective on the temporal side.

Here again the pituitary was probably responsible, though an element of doubt arises through a diabetic family history. Yet the *x*-ray findings, the fits, the mental and ocular symptoms, are very suggestive, and in true diabetes a higher blood sugar might be expected. I hear that under treatment he is keeping free from sugar. At any rate the pituitary, like the thyroid cases, generally declare themselves by their associated symptoms.

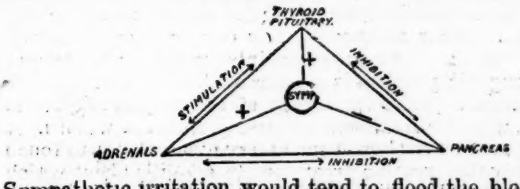
The glycosuria, as distinct from the lactosuria, of pregnancy is probably due to the known stimulating effect of pregnancy on the thyroid and pituitary. I was recently consulted in a case of glycosuria in pregnancy which had caused considerable anxiety because there was acetonuria as well. But the patient had been vomiting a good deal, and I suggested the acetonuria was merely due to this. Normal blood sugar pointed to the same conclusion. At any rate she was delivered of a healthy child, and the glycosuria cleared up.

Although glycosuria may be excited by adrenalin, the case for a definite adrenal diabetes is not clear. Emotional temporary glycosuria is naturally regarded as due to adrenal stimulation through the sympathetic, and probably some of the cases in soldiers are of this type. It also seems probable that some of the cases of glycosuria in later life, accompanied by raised blood pressure, are of this nature, for the two most obvious results of adrenal excess would be raised blood pressure and hyperglycaemia; but we lack precise evidence. I think we may now advance a second generalization:

> *Ordinary diabetes shows no other signs of endocrine disease, while endocrine glycosuria betrays other evidences of that origin.*

This difficulty led Eppinger and Falta to advance the theory that diabetes was not due to any one endocrine gland but to loss of balance between them. It is easy to understand how such a loss of balance could be brought about if there were definite disease of one of them, just as when one group of muscles is paralysed the opponents show a contracture due to unopposed contraction. Hughlings Jackson's dictum concerning diseases of the brain may be applied to the endocrine system. Destruction of tissue, he affirmed, cannot produce positive symptoms. They must be due to the activities of those elements which remain intact. Thus the obesity of pituitary defect and the general infiltration of the tissues in myxoedema may be referred to unchecked action of anabolic glands. Conversely, when a dog has been rendered diabetic by removal of sufficient pancreatic tissue, the glycosuria is greatly reduced by removal of the adrenals, and when the posterior lobe of the pituitary with the pars intermedia has been removed, subsequent removal of the pancreas does not cause glycosuria. The balance, which had been disturbed by the first operation, tended to recover as the result of the second, although in other respects the animal suffered an additional loss.

But how is the balance upset when there is no disease of any one endocrine gland? I maintain that it must be through the sympathetic, which simultaneously stimulates the glands that lower carbohydrate metabolism while inhibiting the one that increases it. This can be expressed by modifying Eppinger and Falta's diagram thus:



Sympathetic irritation would tend to flood the blood with sugar while diminishing the secretion which combines that sugar into a form in which it would escape excretion by the kidney.

To some extent the escape might be checked by raising the leak-point, but this is not usually adequate, and is apt to bring complications in its train.

This sympathetic irritation might be due to an emotional cause. As Crile says: "When stocks go down in New York, diabetes goes up." The factor of strain, anxiety, and emotion is clear in many cases of diabetes. Even when it is not clear we cannot always exclude it because of the tendency to push a disagreeable emotion "out of the mind," which merely means pushing it into the deeper levels of the unconscious where it continues to produce its effect. There is a close analogy between diabetes and Graves's disease in this respect. Normally the sympathetic nervous system should act as a whole—as an intensive preparation for action or defence. But in disease dissociation is a recognized phenomenon—for example, the dissociation of sensory symptoms in tabes. In diabetes there is a dissociated sympathetic response which is specialized in the direction of endocrine katabolism, and once this is started it will tend to continue because nervous impulses tend to run along accustomed channels. Taking the three levels of the nervous system as the psychic, the sensori-motor, and the vegetative, an emotional disturbance tends to assert itself at the highest level as an obsession, at the middle level as a functional paralysis, contracture or anaesthesia, and at the lowest level as diabetes, Graves's disease, asthma, or certain digestive neuroses. I am not going to claim all cases of diabetes as emotional in origin. We are far too ignorant of the morbid anatomy of the sympathetic nervous system to assert this. It has been shown, for instance, that in pellagra there are structural changes in the sympathetic which is responsible for the skin changes among others, and it is quite likely that in some cases of diabetes there are organic changes there also. But I do think the present state of our knowledge does justify, as my third generalization, the following classification of cases of glycosuria:

> (1) Organic origin, *with structural changes in the endocrine glands leading to* (a) *overaction of adrenal, thyroid, pituitary, or* (b) *underaction of the pancreas.*
>
> (2) Sympathetic origin, *with no evidence of structural changes in any endocrine gland, but producing a functional* (a) *overaction of adrenal, thyroid, pituitary, and* (b) *underaction of pancreas.*

But if I stopped here I could rightly be criticized as only explaining part of the disease. As Abderhalden says:

> Up to the present, the most pronounced symptom, that of glycosuria, has dominated the entire investigation of problems concerning diabetes, and it is very probable that this is the reason why the disease is, as a whole, so little understood.

I have long felt it a mistake to look upon the disease merely as a disturbance of carbohydrate metabolism. But we must remember that carbohydrate represents at least 70 per cent. of an ordinary diet, and that the carbohydrates are the most readily mobilized of the foodstuffs. If the metabolism is only slightly affected, it will, therefore, be most apt to show this in relation to carbohydrates. There may be a stage in which, although the power of dealing with sugar as such is impaired, the power of converting it into fat is not. Consequently, rather than permit the escape of valuable food material, the body converts it into fat. Hence the glycosuria associated sometimes with obesity. As von Noorden says, some cases of obesity may be looked upon as latent glycosuria. But as the disease proceeds fat metabolism is also impaired, and diacetic acid appears. Further, it has been shown that protein metabolism is involved, and even the metabolism of inorganic salts.

Diabetes is, then, a sign of exaggerated metabolism, evoked through the sympathetic and the associated endocrine glands, which first asserts itself in relation to the most abundant food material, but as it advances expresses itself in relation to all.

Alimentary Rest.

The recent advance in the treatment of this disease by alimentary rest supports this view. The quickest way of compelling metabolism to adopt economical lines is to cut off supplies. In proof of this, we have only to notice the rapid fall of nitrogenous output as soon as no protein food is taken. The old method of treatment was greatly to

increase the amount of protein in the food, thus throwing fuel into the flames, for excess of protein is a great quickener of all metabolic processes. This was accompanied by excess of fat, which was incompletely oxidized with the formation of toxic products. We all had to learn during the war that we could balance our metabolism at a much lower level than we previously thought possible; and what may be but a passing phase for the normal individual must remain a permanent state for the diabetic. He must be permanently underfed to avoid overtaxing his damaged powers of assimilation. Clearly the outlook depends on how much these powers are damaged. If he can balance his metabolism when the calorie value of his food is adequate to maintain life and a fair display of energy, the outlook is good; if he cannot acquire a balance until the intake is reduced too much for this, the outlook is bad; for there must be a limit to this process of reduction.

It follows that some loss in weight is almost inevitable under the treatment, and to a certain extent this is beneficial; the amount of food required bears a ratio to the total weight of the body. The diabetic does best when his weight is somewhat below that which he possessed before the onset of the disease.

The first and most important effect, then, of alimentary rest in the treatment of diabetes is to slow down metabolism. Another subsidiary effect is that pancreatic activity is diverted from the production of external secretion to producing internal secretion, for, as Allen showed, anything which increases the former diminishes the latter. On Graham's plan, which is the one I usually employ, a mitigated fast of forty-eight hours is prescribed—only some tea or coffee, clear soup, and lemonade are allowed; though 2 to 3 ounces of whisky may also be given in suitable cases. This is followed by two days on which nothing but eggs and green vegetables are given. This diet has a calorie value of 1,170 and a carbohydrate intake of about 10 grams. Cautious additions are made every other day to this diet, so that twelve days after the initial fast about 2,000 calories are taken in the day. A large number of patients will become free from sugar on the fast, and will keep free during the successive increases in the diet. In that case I then cautiously add carbohydrate to the diet—say, 5 oz. of milk first, and then every other day ½ oz. of ordinary bread until glycosuria just returns. The carbohydrate tolerance can thus be quickly calculated.

Say, for example, there was no sugar passed on 3½ oz. of bread, but some appeared when 4 oz. were given; 5 oz. of milk contains 6 grams of carbohydrate, and each ounce of bread contains 16 grams of carbohydrate. Therefore 62 grams of carbohydrate were tolerated in addition to the 10 grams in the so-called carbohydrate-free diet.

Having just exceeded the limit of tolerance it will be found quicker to re-establish the balance by giving one day of egg and vegetable diet, then returning to the diet on which sugar appeared, but with only about three-quarters of the previous amount of carbohydrate. After that it is well to give two consecutive egg and vegetable days once a fortnight, preceded by two days of fasting once a month should return of sugar make this necessary. If the carbohydrate tolerance exceeds 100 grams it is only necessary on two consecutive days once a fortnight to halve the amount of carbohydrate taken. Having in this way established standard diet for the individual, I provide for some variety in the diet by giving them a table with some comparative carbohydrate values:

Carbohydrate Values.

1 oz. of bread	=16 grams
2 oz. of potato	=16 grams
2 oz. of green peas	=10 grams
3 oz. of artichoke	=12 grams
3 oz. of baked apple	=15 grams
5 oz. of milk	= 6 grams

Any permutations and combinations of these can be allowed as long as the total does not exceed the limit arrived at as above. Say this is 60 grams: then, for example, 3 oz. of bread and 3 oz. of artichoke = 60 grams of carbohydrate.

If, on the other hand, sugar does not disappear on this scheme it is best to repeat the process once or, if necessary, twice more. But cases which do not become free from sugar on the first fast seldom do well. I have not often used the more prolonged fast recommended by Allen because, though it may render the urine free from sugar more quickly, it has sometimes done so at the expense of the patient's general condition. As far as possible I avoid the use of special diabetic breads, preferring to work the patient's tolerance up to a limited amount of ordinary bread. In this connexion it is worth while to take advantage of the fact that a patient's carbohydrate tolerance is highest at breakfast, no doubt because of alimentary rest during the night.

One of the greatest advantages gained by this method of treatment is that we are no longer on the horns of this dilemma—rapid restriction of carbohydrate on the old plan produced toxic acidosis, while failure to restrict adequately allowed the disease to progress. While it is true that sudden restriction of the carbohydrate intake will lead to acetonuria if a liberal diet of protein and fat takes its place, it is also true that cutting down the whole of the diet practically to zero will be followed by a diminution of acetonuria as well as glycosuria. The normal individual who fasts develops some acetonuria because he has to live on his fat; but this is not enough to produce toxic symptoms. In the diabetic this slight fasting acetonuria develops, but this is more than counterbalanced by the drop in toxic acetonuria produced by a diet poor in carbohydrates but rich in fats. It is certainly true that coma occurs much less frequently on this treatment than on the older methods. This plan of re-educating the patient's metabolism from zero, as it were, has yielded in most observers' hands far better results than any previous methods. Nearly 75 per cent. of all cases admitted to hospital are rendered free from sugar for longer or shorter periods, and the average mortality rate is 7.7 per cent., as against the former 23 per cent. (Poulton.) But one has still the unfortunate experience of watching the level of carbohydrate tolerance continue to fall in a good many cases. For, after all, we are not yet attacking the underlying cause, but only the exaggerated metabolism which results from that cause. Not until the sympathetic disturbance can be controlled shall we acquire a mastery over the disease.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF VENEREAL DISEASES.

Mr. E. B. TURNER, F.R.C.S., President.

DISCUSSION ON VENEREAL DISEASES IN WOMEN AND CHILDREN.

OPENING PAPERS.

I.—A FEW POINTS IN RELATION TO THE TREATMENT OF VENEREAL DISEASES IN WOMEN.

BY

MORNA RAWLINS, M.B., B.S.Lond.,

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I THINK we are all agreed that this is one of the most urgent medical problems of the day. It is concerned with mother and child welfare. It affects the health of the people, the economic standard of the nation, in that every individual worker affected by this disease is economically less efficient in output, whether intellectual or industrial.

The eugenic problem is greater still, but I must confine myself to the particular aspect of the subject allotted to me—namely, the treatment of these diseases in women.

I propose in the short time at my disposal not to touch on the so-called routine treatment of syphilis about which everyone has heard so much, but to deal with special

points in syphilis and also with the more vexed question of the treatment of gonorrhoea in women.

SYPHILIS.

The points I wish to bring forward in the treatment of syphilis are:

1. Treatment of those cases intolerant of arsenic and mercury.
2. Points in the treatment of antenatal syphilis.
3. The need of collaboration and "team work" to produce accurate figures as to the results of treatment in certain specified conditions.

First let us consider those who are intolerant of treatment either by arsenic or mercury. Let me say at once that I rely on sulphur, either alone or combined with iodine: sulphur given in the form of intramine either by intramuscular or intravenous injection, or by the mouth in the form of collosol sulphur or sublimed sulphur.

The following cases occurring in my own clinics, so treated, will support my statement. From January, 1917, to March, 1920, not counting injections given to my cases at the Lock Hospital, approximately 6,000 injections of novarsenobillon or disodoluargol, have been given by me and my assistants. Of these only three cases have shown marked intolerance to arsenic, and all yielded to sulphur treatment. I should like to give details of these three cases.

CASE I.

The patient, aged 25, had five weekly injections of novarsenobillon—0.45 cg., and after the first dose 0.6 cg. After the second injection the patient had a transient rash, and after the fourth injection diarrhoea and vomiting, but she did not complain as she was afraid that the next injection would not be given. Four days after the fifth injection she attended the clinic with an acute general exfoliative dermatitis. After admission into the ward she was found to have albuminuria, oedema of the optic discs (she complained of transient blindness). This was associated with general oedema, neuritis and diaorrhoea. She was given alternate injections of intramine (intramuscularly) with collosol iodine intravenously—three injections of intramine 2½ to 5 c.cm. and four injections of collosol iodine 40 c.cm. to 100 c.cm. The injections lasted over twenty-five days, and the patient was discharged two days later quite well. This patient has remained with no symptoms and a negative Wassermann reaction for over a year.

CASE II.

Unfortunately, there are no notes of this patient, and I have to quote from memory. The patient had three injections of novarsenobillon. She had an attack of diarrhoea and vomiting, which she did not report. Two further injections were given. She then attended the clinic with oedema and dermatitis of the hands, feet, and ears, extending to formation of bullae. She had albumin in the urine. She was in the ward at the same time as the last case, and was treated on exactly similar lines, with similar results.

CASE III.

This patient, aged 42, attended the clinic with marked signs of secondary syphilis. She was given two weekly injections of novarsenobillon 0.3 gram without symptoms, this was followed by an injection of novarsenobillon 0.45 gram. She had a reaction on the same day and complained of headache and shivering; temperature 99°. Five days later she attended the medical out-patient department and was admitted into the medical ward; her pulse was then rapid. She had general oedema over the face and neck; temperature 98°; albumin in the urine. She gave a history of rigor the previous night. She was transferred to the venereal ward the next day, the condition being rather increased. Intramine 3 c.cm. was given intramuscularly, and within three hours the oedema of the face had disappeared; she still had albuminuria, so two more doses were given on successive days, when that symptom also cleared up.

I consider the small percentage of ill effects I have had is due to the following circumstances: (1) I have never left the preparation of the drug to unqualified subordinates. (2) A dose is never repeated at one week's interval if there has been any ill effects (such as headache, fever, diarrhoea, vomiting) from the previous injection. If there has been a reaction I give the patient sulphur by the mouth for a week before the next injection. (3) I dose the patient according to weight and general condition, as distinct from routine treatment.

The value of sulphur combined with mercurial treatment in syphilis has been realized for some time. At Aachen, the intensive mercurial treatment of syphilis has been associated with sulphur water. There is no doubt that patients unable to take even small doses of mercury without symptoms of mercurialism (even after due attention has been given to the teeth) can take this drug in conjunction with sulphur without any ill effects.

Collosol sulphur 1 drachm thrice daily, or sublimed sulphur 1 drachm each night, will go far to prevent these slight symptoms of mercurialism, which, when they occur, are so uncomfortable to the patient. If a patient is unfortunate enough to develop signs of mercurial poisoning, intramine, which, in my experience, acts more quickly than any other form of sulphur, should be given at once. The dose is 2.5 to 3 c.cm. intramuscularly, which can be repeated, if necessary, for several days.

Mercurial Poisoning.

The following cases of mercurial poisoning occurring in my own clinic may be of interest:

CASE I.

A patient who had taken 3 grains of pil. hydrarg. without symptoms for several weeks, and 4 grains of the same drug each day for one week, came to the clinic with ulceration and swelling of the gums, salivation, and foul breath. She was given 4 c.cm. of intramine intramuscularly, alternating with 50 c.cm. collosol iodine intravenously, the intramine and collosol iodine being given on alternate days for four days, when the symptoms disappeared. Since then she has been able to take up to 8 grains of pil. hydrarg. a day without symptoms.

CASE II.

A patient ordered to take 4 grains of pil. hydrarg. a day misunderstood the directions and took 12 grains daily. She developed extensive ulceration and bleeding from the gums, and anuria to the extent of 2 oz. per day. She was treated by three injections of intramine intramuscularly, collosol sulphur ʒiii t.d.s. by the mouth, and (of course) fluid diet. In approximately two weeks she was well.

CASE III.

A patient, first seen in the late stage of secondary syphilis in 1917, was given a course of novarsenobillon injections and treatment with mercury, and then sent back to her private doctor for continued mercury treatment. A few months later she returned to the clinic with a gumma of the neck, alopecia, and a history of being unable to take even one grain of mercury a day without salivation. She was taken into hospital and given an intravenous injection of collosol iodine 50 c.cm., followed two days later by intramine intravenously 50 c.cm., and three days later by collosol mercury 5 c.cm. intravenously. This was followed two days later by another intravenous injection of intramine 50 c.cm. and 8 c.cm. mercury two days afterwards. She tolerated both the mercury injections without adverse symptoms; the syphilitic symptoms cleared up and she has since taken 3 grains of mercury a day with no further recurrence of mercurial symptoms.

Antenatal Syphilis.

Let me now take up my second point, namely, antenatal syphilis. In dealing with the treatment of antenatal syphilis I would like to urge that cases giving a history of miscarriages and stillbirths, even with a negative Wassermann reaction, should be treated with mercury and potassium iodide. I think too much stress is laid on the importance of the Wassermann reaction, and that more reliance should be placed upon clinical signs and history. I have found that intravenous injections of arsenic can be given safely up to the end of pregnancy, and I have not had any cases of post-partum haemorrhage following such treatment. I have begun treatment as late as the seventh month, with the result that an apparently healthy child giving a negative Wassermann reaction has been born with no subsequent syphilitic symptoms.

My third point is that there is a great need for better team work, and that the syphilologist in venereal clinics requires the co-operation of his colleagues in the eye, throat, skin, and nervous diseases departments. Few medical officers working in venereal disease clinics can find the necessary time, even if they have the necessary skill, for careful examination of the special systems. The skin manifestations of syphilis, for example, are so varied and so simulative of other lesions, that unless the officer in charge is also a dermatologist, he should be able when in doubt to utilize the special knowledge of his colleagues to prevent wrong diagnosis, and to serve the best interest of his patient.

GONORRHOEA.

In dealing with gonorrhoea in women we have to consider one of the most insidious diseases, a disease more difficult to treat in women than in men, perhaps because the clinician so seldom sees gonorrhoea early in women, the acute condition sometimes being so slight as to pass unnoticed by the patient. The gravity of the disease cannot be over-estimated, its sequelae are so far-reaching,

and the difficulty in effecting a cure is so great. Sometimes one drug, sometimes another holds out a real prospect of being a specific for the disease, apparently curing cases on which it is tried, and then one's hopes are dashed to the ground by relapse or recurrence. Here the question arises—Do cases truly relapse, or are some apparent relapses reinfections?

The work on the gonorrhoeal side of a venereal clinic is often disappointing but it can never fail to be interesting. The treatment of gonorrhoea is still in the experimental stage.

In treating a case of gonorrhoea in the female care has to be taken that no infected part is overlooked, otherwise many disappointing results will be obtained. Thus a cervicitis may be treated and clear up, the patient later developing fresh symptoms such as arthritis from an overlooked and untreated affection of the duct of Bartholin or Skene.

In an ordinary subacute case of gonorrhoea I have found various drugs of use. Certain drugs will suit some patients, whilst other patients respond better to a different drug. The most useful have been silver salts—such as protargol 10 per cent., eucalyptus oil in olive oil 40 per cent., and picric acid in glycerin 50 per cent. Of these I prefer, if anything, picric and glycerin, applied two or three times a week with (if daily treatment by packing or swabbing out is not possible) treatment at home by pessaries. I find pessaries of protargol 10 per cent. and sauerin pessaries very useful. In using picric acid and glycerin the vulva, urethra, vagina and cervix should be swabbed in turn, care being taken not to leave a pool of the solution in the vagina. The patient may complain of smarting and pain. This can easily be remedied by passing urine and washing the parts. Occasionally the patient becomes jaundiced, in which case the picric acid treatment should be stopped, when the condition rapidly improves. A cast of the vagina may even be thrown off. Many clinicians advise douching, but I prefer not to use this measure unless the tubes are affected, when I consider warmth given by the douche is of benefit. A douche at high pressure given by a patient to herself in unhygienic surroundings may cause the disease to spread from the cervix and vagina to the uterus, tubes and ovaries, especially in women who have borne children. If douching is ordered the patient should be told to lie on her back with the buttocks slightly raised, the douche-can not to be more than 1½ ft. above the level of the body.

Many cases improve with vaccines. If the medical officer in charge of the clinic is not an expert in pelvic examinations, and is doubtful as to the condition of the ovaries and tubes, I would strongly advise him to refer the case to a gynaecologist before commencing a course of vaccine therapy. Cases complicated with infection of tubes and ovaries, although reacting well as a rule to vaccine therapy, should be started with much smaller doses than uncomplicated cases. Copper or zinc ionization is advocated by some authorities, and here again co-operation between the venereal disease clinic and the electro-therapeutic department is called for.

Infection of the urethra and Skene's ducts, and the duct of Bartholin, is common and very persistent. Skene's ducts and the duct of Bartholin can be fairly easily washed out by means of a syringe with curved blunt pointed needle, and if this fails the duct can be incised and treated with iodized phenol or protargol, or it can be destroyed by an electric cautery. Urethritis usually clears up readily by the application of picric acid locally and urinary antiseptics by mouth.

Some authorities advocate washing out the bladder in cases of urethritis in the female. The female bladder is less liable to infection than the male—there is no back flow, and it seems there is a real risk of setting up a gonococcal cystitis in a patient with gonorrhoeal urethritis by the injudicious passage of catheters. When washing out the bladder I use a catheter made like a miniature intrauterine douche nozzle, and by passing it gradually up the urethra wash it clean before finally entering the bladder. Here again the treatment can be carried out with safety by an experienced person.

To touch on the numerous other complications of gonorrhoea and their appropriate treatment would take more time than I have at my disposal, but I hope the few aspects of the treatment of venereal disease that I have mentioned will help to start a useful discussion.

In conclusion let me emphasize the importance of a high standard of cure. If a high standard of cure is not maintained results will be disappointing. If we all endeavour to maintain a high and common standard, at least we shall have done our best to eliminate possible risk of relapse and infection of healthy people.

DISCUSSION.

Dr. FLORA BUTCHER (U.P. India) confessed to harbouring somewhat conservative views on the subject of the treatment of syphilis. She regarded mercury as the chief drug in the treatment of syphilis, and was accustomed to employ it in the form of hyd. c. creta. Dr. Butcher gave instances of cases of accidental infection occurring in India. She laid stress on the wide variations in tolerance to mercury exhibited by different individuals.

Sir JAMES GALLOWAY (London) wished to emphasize the remarks made by the two previous speakers on the care necessary in the treatment of venereal disease, especially when using the more recently developed "intense" methods of treatment. Miss Morna Rawlins had laid stress on the necessity of making an accurate diagnosis, especially in the case of syphilitic infection, before commencing treatment which involved the administration of powerful doses of arsenic. It was not always easy to be certain of syphilitic infection, even when cutaneous lesions were present, as certain diseases with cutaneous manifestations having no relationship whatever to syphilis were from time to time mistaken to be of syphilitic origin, and treatment carried out forthwith. Certainty of diagnosis, arrived at after consultation with experts, was of utmost importance. Similarly Dr. Flora Butcher had remarked on the unnecessarily violent methods of treatment occasionally recommended in the treatment of gonorrhoea, especially in the case of young women. In this matter he desired to support the warnings given by Dr. Butcher. The medical wards of a general hospital offered many opportunities of testing the value—the rightness and wrongness—of prevailing methods of treatment. For years it had been a matter of great interest to study the results of operations on the gastro-intestinal tract. Many of the bad results of these operations, as well as the more favourable, were to be seen in general medical wards. Patients so suffering required not only prolonged and patient medical treatment but demanded the sympathy of all members of the medical profession. These results were still drifting into our wards from all parts of the country. But recently a new series of "accidents" was claiming attention—namely, instances of serious visceral disease following the newer and very vigorously exercised methods of treatment of which so much had been written both in the lay and the medical press. He wished to mention one or two instances to illustrate the point, and as warnings. Recently he had had under care in the wards of Charing Cross Hospital a woman of about fifty-eight years of age, who was admitted with symptoms of renal disease associated with severe oedema. It appeared that some time ago her husband had been suspected of having syphilis. He was treated by means of injections of an arsenical drug, and a series of injections of galyl had been administered to the patient apparently by way of being on the safe side. Soon after she was found to be suffering from what was described as Bright's disease and came under his care. A critical review of the history gave no indication whatever of syphilitic infection. There were no lesions and no changes in the blood indicating the disease. It could, he thought, be safely said that this patient had not syphilis. But the treatment by galyl had apparently produced disease of the kidneys, and although she improved while under care, permanent damage had been done and ultimate recovery was not possible. Again, in certain circles, both medical and non-medical, the suspicion of syphilitic infection seems to bring about a complete loss of balance and want of exercise of judgement. During the later stages of the war a military officer was suspected to have syphilis. He was promptly treated by a series of intravenous injections of an arsenical preparation. Not only was he treated, but his wife, in whom no indications of syphilis had been noted, was also given a prolonged series of intravenous injections of arsenic, and in both cases antisyphilitic treatment was carried on later without supervision. On reviewing the history of both these

cases at a later period, when both the patients were suffering from the effects of the administration of arsenic, mercury and iodides, there seemed to be no proof whatever that either the husband or wife had suffered from the disease. Again, a man who appeared to have had a mild eruption of psoriasis was stated to be suffering from syphilis. On this diagnosis mercury was administered, and the patient developed the unusual but well-known form of mercurial dermatitis associated with erythema and exfoliation of the epidermis. He passed through a very severe illness in consequence. Subsequent investigation gave no evidence whatever that he had ever suffered from syphilis. It was true that he appeared to have been cured temporarily from his psoriasis, but at what a cost! Such cases as the foregoing were unfortunately too common, and he mentioned them to emphasize not only the necessity for certain diagnosis before venturing on courses of treatment such as those carried out at the present time, but also the necessity of prudence and caution in carrying out treatment.

Dr. AMAND ROUTH (London) said that early treatment of gonorrhoea in women along the whole generative track—especially in the newly married—was most successful in preventing such serious sequelae as salpingitis, a condition that led to invalidism and sterility. Why did not the fertilized ova of women infected with syphilis all die within a few days? He had suggested that the chromic ferments protected the child from the infection by granulosing the spirochaetes and preventing them from developing till after pregnancy. This protective power enabled curative treatment to be adopted at the third or fourth month, with the result that healthy children were born at full term. There were several other questions for which he should like to find an answer. How could an apparently clinically healthy woman, who had no history of previous diseased children and might give a negative Wassermann reaction, be diagnosed as likely to have a syphilitic child? Again, could a child treated during pregnancy through its mother be treated during lactation by deriving the arsenic and mercury administered to its mother, or must the child be treated separately? He would like to hear the views of others with regard to these points.

Dr. MARION MACKENZIE (Leeds) urged that the medical profession should teach venereal men and women methods of birth control. Women often became pregnant while attending a clinic. Apart from the risk of defaulting and not completing treatment, it was a sad sight to see expectant mothers in the atmosphere of a venereal clinic. If necessary such women must be taught means of preventing conception.

Mr. KENNETH WALKER (London) claimed that the treatment of syphilis at the present day was extremely satisfactory. In no type of case was treatment more successful than in that of the pregnant woman. What was vitally necessary was that far greater facilities should be afforded for the treatment of syphilitic pregnant women. This, rather than birth control, was the urgent need of the moment. The real problem, however, was the treatment of gonorrhoea. Gonorrhoea was the Cinderella of the venereal sisters, and all speakers showed a tendency to avoid so thorny a subject. Both diagnosis and treatment were matters of great difficulty in female gonorrhoea. As an example of the doubt and difference of opinion that existed one speaker had advocated the use of pure carbolic acid, whilst another had urged that treatment as a whole was too energetic, and that palliative methods were indicated. In one large London clinic the gonococcus had been found in over 80 per cent. of cases that were "clinically" chronic gonorrhoea. In other clinics the gonococcus was comparatively seldom found in chronic cases. A vast amount of knowledge was required before the diagnosis and treatment of gonorrhoea in the female would be comparable to that of syphilis. With Dr. Morna Rawlins's method of treatment the speaker was in general agreement. As a possible method of treatment he would mention diathermy applied to the cervix. This method had been employed at St. Bartholomew's, selected cases being referred to Dr. Cumberbatch for treatment. Although too few cases had been so treated to justify dogmatic statements, the results were encouraging. Where the case was chiefly one of secondary infection, zinc ionization was used as a follow-up treatment. Although electrical methods had, in the speaker's opinion, lamentably failed in the case of male gonorrhoea, it offered more hope to that of the female.

Colonel L. W. HARRISON said that the treatment of gonorrhoea in women seemed to be largely a question of drainage of a dead end. He would urge the importance of assisting nature to eliminate the poison from the deeper tissues. For this reason he was not inclined to apply such strongly caustic applications as had been suggested, but would use glycerin and some antiseptic, with the object of promoting a flow of serum to the surface.

He suggested that research into methods designed to increase the antibody response would be valuable. The aim should be to raise the resistance. The chief difficulty lay in the fact that the gonococcus was a poor antigen. Regarding efforts to raise the antigenic power of gonococcal vaccines, he thought that Dr. Thomson's detoxicated vaccines were better than ordinary emulsions. As an adjuvant to vaccine treatment he considered that the contemporaneous administration of arsenobenzol compounds was worthy of trial. The idea was suggested by Dr. Ainley Walker's work on the effect of arsenobenzol compounds on the antibody response to typhoid and paratyphoid injections in animals. With regard to the test of cure, he would draw attention to the value of cultural methods. In a number of cases he had found that, although an honest search for gonococcus had failed to discover gonococci, the culture had been positive.

Dr. W. H. I. SELLERS (Preston) said that he had hoped to have learnt from the opener of the discussion a good routine method of treatment applicable to most cases of gonorrhoea in women. Could Dr. Morna Rawlins say exactly what procedure she adopted in cases of gonorrhoea?

Dr. E. W. G. MASTERMAN (London) asked whether Dr. Rawlins considered sulphur to be directly useful in the cure of syphilis or merely indirectly of utility in antagonizing intolerance to mercury.

Dr. MORNA RAWLINS, in replying, said that she agreed that mercury was the most important drug we possessed for the treatment of syphilis. She was accustomed to carry it up to the full extent of the patient's tolerance. She agreed with Mr. Kenneth Walker that the antenatal treatment of syphilis gave excellent results. It might, however, be advisable to instruct certain cases in methods of avoiding pregnancy. She had had no personal experience of electrical methods applied to the cervix, and was interested to hear of Mr. Kenneth Walker's experiences. It was for reasons such as these that she had advocated the necessity for team work. In answer to Dr. Masterman she would say that sulphur was both directly and indirectly of value in the treatment of syphilis. She had known cases of syphilis yield to sulphur which had proved refractory to arsenic and mercury. Dr. Sellers had asked for a routine treatment for cases of gonorrhoea in the female. It was a difficult question. Personally she preferred the use of picric acid in glycerin. After washing the external genitalia a Fergusson's speculum was passed, and the cervix, vagina, and vulva in turn subjected to careful swabbing. Where infection was localized in Skene's tubules or Bartholin's gland, a thinner solution of picric acid and glycerin was injected by means of a blunt-pointed needle. She gave vaccines, but before doing so made a careful abdominal examination. If the case was complicated by the presence of an inflamed tube it was advisable to start with a small initial dose. With regard to the matter of diagnosis, the clinical appearance of the genitalia was of great importance. The red macules round the cervix and urethra were very characteristic. The complement fixation test had given very satisfactory results. She could not say that she had noticed any benefit from the use of salvarsan in cases of gonorrhoea complicated by syphilis. Finally, she would like to emphasize again the importance of establishing a high standard of cure.

II.—THE TREATMENT OF SYPHILIS IN INFANCY AND CHILDHOOD.

BY

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THE treatment of congenital syphilis is indeed a matter of urgency. The malady is not only responsible for a great loss of potential life through miscarriages and stillbirths, but it increases the infantile mortality rate in early

infancy, and also causes much suffering and invalidism during later childhood.

In the meantime it is absolutely impossible to state with any degree of accuracy what it costs the country through loss of child life and invalidism, but what we do know is sufficiently ominous to warrant us in taking all measures at our disposal to combat it. Unfortunately, too, as a result of the recent great war, matters will become rather worse than better. There is, however, one cause for consolation: we are in possession of knowledge which, if properly applied, would almost wholly eradicate it.

Loss of Child Life Due to Syphilis.

Though this discussion is not one on the frequency and manifestations of congenital syphilis, it may not be out of place to mention a few facts in order to impress the seriousness of the matter on our attention.

Of the loss of potential life through miscarriages and stillbirths it is impossible to form a correct estimate, since such are not notifiable. Dr. Williams of Baltimore,[1] however, found that syphilis caused 20 out of every 1,000 pregnancies to terminate in stillbirths. Our published statistics of deaths only record 2 out of every 1,000 children born alive as due to syphilis, but no one considers these figures adequate. Children dying from syphilis are for many and apparent reasons notified under other causes. Dr. Dittmar states that in Scotland 4,000 people die annually from syphilis, and we know from the British Royal Commission on Venereal Diseases that 75 per cent. of these deaths occur in infants and children under five years of age. According to the Royal Commission, 30 per cent. of the children in the blind asylums of England owe their blindness to syphilis, and Dr. Morax of Paris has informed me that of the blind children in Paris, between the ages of 3 and 13 years, 44 per cent. are syphilitic. Syphilis accounts for from 7 per cent. to 25 per cent. of all cases of congenital deafness, and is in addition responsible, at least according to some authorities, for 50 per cent. of cases of mental deficiency, epilepsy, and other nervous diseases.

The seriousness of the matter is strikingly shown by an investigation carried out by Dr. Kerr Love of Glasgow[2] in connexion with syphilis as a cause of deafness in childhood. This author records the complete histories of twenty-one families. There resulted 172 pregnancies of which 75 ended in stillbirth, and of the 97 children born alive 31 were either deaf or blind.

The burden on the State alone, apart altogether from the misery entailed on the children and their parents, is enormous. The education of a blind child costs seven times, and that of a deaf child, ten times as much as that of the normal child, and, previous to the war, each mental defective permanently housed in an institution cost the ratepayers £40 per annum.

With this short introduction, then, which is merely intended to focus attention on the urgency of the problem, I pass to the subject proper of our discussion—namely, the treatment of syphilis in infancy and childhood.

General Remarks on Treatment.

In all infective diseases, and especially in those of which we have a knowledge of the causes and methods of propagation, the treatment naturally divides itself into two classes—prophylactic and curative. Though I have mentioned these two methods in their proper order of importance and precedence, I will, because it is the older and more generally adopted one, treat of the latter first.

Within recent years we have been supplied, as a result of the experimental researches of the chemiotherapists, with a drug—dioxydiaminoarsenobenzol—which has improved our results of the treatment of syphilis immensely. In fact to-day the chief interest in the treatment of all forms of the malady centres round the use of this drug. Unfortunately, however, the drug has not been used in infancy as freely as in the case of the adult. Ehrlich himself was in part responsible for this attitude. He expressed the opinion that its use might be dangerous in infancy and childhood because it was such a powerful spirochaeticide, thereby causing the liberation of large amounts of endotoxin. I can say, however, as the result of fairly extensive personal experience, that it seems to have an equally successful field among children and to be devoid of any special danger.

Treatment by Mercury.

Treatment by mercury alone should be discarded. All authorities are to-day agreed that mercury reinforced by salvarsan is the best treatment. The rapidity with which the cutaneous manifestations disappear under salvarsan is most striking. It must nevertheless be admitted that mercury alone will, in the majority of cases, cause a disappearance of the symptoms, and in a certain proportion of them a positive Wassermann reaction to become negative, and to remain so. Its efficacy, however, falls far short of the combined treatment with the two drugs. In a series of cases under three months of age, and treated with mercury alone, my death rate was 71 per cent., a figure with which no one could rest satisfied. These figures too are not exceptional, but are parallel with those recorded by other workers.

The preparation of mercury to be adopted as the adjunct is of no small importance. In my opinion no preparation of mercury is so efficacious as the ointment. I have often seen grey powder (hydrarg. cum creta) administered for weeks without the slightest improvement, but on the adoption of inunction an immediate disappearance of the symptoms. This was in the days when mercury was used alone, but for that very reason one was able to discriminate between the different preparations. Grey powder has the disadvantage of causing green and loose stools, and this may in fact be the reason for its lessened effectiveness by hindering absorption. The only exception to above is the case of condylomata, which react specially well to the local application of calomel.

Treatment by Salvarsan.

Salvarsan may be administered in many ways—intramuscularly, intravenously, or intrathetically in the case of nervous manifestations. It may be given rectally, and it has even been administered through the medium of the mother's milk. Of the latter method of administration I have no experience. That it does act when introduced rectally there is no doubt, but its action is very slow and uncertain, and to my mind this method of administration is not suited for children, as they hardly ever retain it sufficiently long to allow of its absorption.

Of the other two routes—intramuscular and intravenous—I have no hesitation in advocating the latter. With the former induration, with at times necrosis and sloughing, results, and the pain in consequence of the injection seems to be very great. I have tried all methods recommended for avoiding these accidents and drawbacks, but have not as yet come across one which is always successful. The younger infants do not seem to suffer so severely, but the older children simply scream with pain immediately after the intramuscular injection, and when this is given into the buttock, a not uncommon site, they are unable to sit or rest comfortably in bed for days afterwards. Mothers whose infants and children have received both intramuscular and intravenous injections always ask for the drug to be given intravenously. They invariably state that after the intramuscular injection the children are restless and peevish, but that with the intravenous injection no untoward symptoms are encountered, except perhaps occasional vomiting for a few hours afterwards.

Site and Method of Injection.

The site depends on the age of the patient. In infants and children under the age of 18 months the veins of the scalp are the most suitable. These veins in infants, and especially in emaciated infants, are, with the exception of the external jugular, the only ones that are as a rule visible. Another reason for choosing the scalp veins for venepuncture is that the head is the only part of the body which can be effectively controlled without the aid of an anaesthetic. With the proper size of needle (No. 1) and a little practice the operation is one that can be easily carried out. The great secret of this operation is to have the head held immobile, and to have everything for the injection in readiness beforehand. As the operation must be performed as quickly as possible, there is not sufficient time to inject large quantities of fluid, and in consequence concentrated solutions are employed. I am in the habit of using in both the adult and the child concentrated solutions, dissolving, in the former case, as much as 0.6 gram in 10 c.cm. saline or distilled water. For children with a dose of 0.1 to 0.2 gram 3 or 4 c.cm. are ample. I have never seen any accident result from

the use of concentrated solutions, and, if the injection is made slowly, the drug is, I think, sufficiently diluted by the blood as it flows past the point of the needle.

The solution of the drug is prepared, sucked into a syringe—the 5 or 10 c.cm. Record syringe is a handy size—which is placed in a position to be easily reached by the operator. The head of the child is prepared as for any aseptic operation. In some cases it may be necessary to cut the hair, but frequently it is sufficient simply to clean the parts with methylated ether.

The child is tightly wrapped in a blanket to control the movement of the body and limbs, and laid on a table with the head resting on a firm wedge-shaped pillow. The head is firmly held in position by the hands of an assistant or nurse, and pressure of the chest by the assistant at the same time restrains any movement of the body. The assistant with the thumb of one hand causes pressure on the vein, so that the distal portion of the vein becomes distended and the more easy to enter. With a needle of the size above-mentioned (No. 1), about 1½ in. long, and the point bevelled at an angle of 45 degrees, the vein is entered. One knows when the needle is properly in the lumen of the vein by the free flow of blood. When one is satisfied that the needle is properly in the lumen of the vein, but not unless, the syringe with the drug is attached, the thumb of the assistant ceases to apply pressure on the vein, and the drug is slowly injected. Pressure for a few moments afterwards is usually sufficient to stop all bleeding.

In spite of all that has lately been written in advocacy of the longitudinal sinus as a convenient site for venepuncture, I am distinctly adverse to its habitual selection. Though the sinus is larger than the scalp veins, it is not always easy to enter, and if the infant is collapsed it may be impossible to perform the operation. If, too, by any chance some of the drug escapes from the lumen of the sinus, owing to transfixion of the wall of the vessel, irritation of the cerebral convolutions, as I have seen occur in one case, may result. And finally, should sepsis ensue, as is possible even with the greatest care in any operative procedure, fatal meningitis results. For these reasons, then, I am not inclined to advise lightly the longitudinal sinus as the seat of election for intravenous injections.

In children over two years of age the veins of the scalp are as a rule not visible, and hence another site must be chosen. In the younger children the external jugular vein is available, and in the older, especially those that are spare, the veins at the bend of the elbow, just as in the case of the adult, may be selected, but it must be admitted that in children between 2 and 5 years of age venepuncture is an operation of some little difficulty. As children cannot be expected to remain absolutely still during such an operation, and it is impossible to immobilize these parts (neck and arm) an anaesthetic is usually required. Many a time I have been tempted to dispense with the anaesthetic, but as a rule the child has wriggled, the needle has either transfixed or slipped out of the vein, the drug has in consequence escaped into the surrounding cellular tissues with resultant induration, thrombosis of the veins, and at times sloughing, not to mention the accompanying pain. After such accidents, too, this field of operation cannot be used on a subsequent occasion, which is a matter of importance, as the operation is one that requires to be repeated many times.

Dosage of the Drug.—In the early days of salvarsan therapy 0.005 gram per kilo body weight was the dose recommended. This means for a child of one to two months of age 0.02 gram salvarsan, or 0.03 gram neo-salvarsan, a dose, in my opinion, unduly small. I am in the habit of commencing in infants with 0.05 to 0.1 gram neo-kharsivan and gradually increasing it, especially in the older children, to 0.2 or 0.3 gram. In infants under six months of age I rarely give more than 0.15 gram. The injection should be repeated once or twice weekly until a definitely negative Wassermann reaction is obtained, after which it is advisable to give one or two further injections. My usual practice is to give one injection weekly.

Analysis of my case records for the children under three months of age would seem to show that the duration of the course of treatment rather than the total amount of the drug given is the deciding factor in inducing a negative Wassermann reaction. The percentage of cases in which a negative reaction was obtained rose steadily with the number of injections given.

In a series of thirty-one cases, in which the individual dose varied, but in which the average total amount of the drug given was 0.9 gram, a negative Wassermann reaction was obtained in 75 per cent. of the cases when the course consisted of six weekly injections, in 80 per cent. of the cases receiving seven injections, in 83 per cent. of the cases receiving nine injections, and in 100 per cent. of the cases when the course was extended to eleven weekly injections.

I might here remark that I have not come across the case of an infant in which the Wassermann reaction after being negative has again become positive, although many children have been followed and re-examined six and twelve months, and even three years after the termination of the course of treatment. As one can easily understand, it was found much more difficult to induce a negative reaction in the older children. In several cases of eight and nine years of age thirteen and twenty injections, involving the use of 3.75 and 6.0 grams, failed to produce a negative Wassermann reaction.

Choice of the Preparation of Arsenic.

I have used salvarsan, neo-salvarsan, kharsivan and neo-kharsivan, and am inclined to think that all are equally efficient. For some considerable time past I have only employed neo-kharsivan, which I at first considered toxic, but of late I have seen no bad effects from its use. It is understood, of course, that in all cases (infants and children) mercurial inunction is practised at the same time. In the older patients, especially in the presence of bone lesions, a course of potassium iodide is to be recommended.

General Treatment.

In the treatment of the younger infants and children nutrition is naturally of considerable importance. Infants thrive better while on the breast than on the bottle, and therefore, whenever breast feeding is possible, I advise that it should be carried out. Resort to bottle-feeding should not be made unless for very grave reasons. Consequently congenital syphilitics should be treated as out-patients, unless the circumstances of the mother, perhaps illegitimacy of the child, or some serious complication decide otherwise.

Results of Combined Therapy.

The results obtained by the combined method are better than those obtained by the use of mercury alone, but they still leave much to be desired. In contrast to the 70 per cent. mortality experienced in children under three months of age, when treated with mercury alone, the mortality rate for the same age period with the combined treatment was reduced at first to 37 per cent. and latterly to 26 per cent. This is a considerable improvement, but a result which even yet falls short of that obtained by prophylactic or antenatal treatment.

Prophylactic Treatment.

Prophylaxis or antenatal treatment is the only rational method of treating congenital syphilis. Its efficacy, however, depends on the manner in which it is carried out. It is no new method, as physicians have always treated the expectant syphilitic mother in the hope that a healthy child would be born. It has unfortunately been the rule to employ simply mercury and potassium iodide, and though at times such measures may be successful in obtaining the birth of a non-syphilitic child, they frequently fail in having this effect. The following charts (Nos. 1 and 2) demonstrate two of the results obtained in the author's practice by this method. In one case (No. 1) a healthy child was born immediately after the course of treatment, but through its discontinuation the disease reappeared in the next offspring. In the other case (No. 2) syphilitic children continued to be born in spite of prolonged treatment of the mother extending over the course of three pregnancies.

How different are the results when salvarsan or one of its allies is employed in addition, with the object of reinforcing the effect of the mercury! This is a point which we have already noted in connexion with the curative treatment of the disease, but in prophylaxis the results would appear to be even more striking.

The treatment of the pregnant mother by means of salvarsan was applied in the first instance by Sauvage, who obtained 93.3 per cent. of healthy non-syphilitic children. Fabre and Bourret, who emulated Sauvage's

example, obtained even better results, namely, 100 per cent. of successes. Later Galliot[3] collected the statistics relating to 145 women treated with salvarsan alone, and recorded that 91.2 per cent. of the children were healthy.

Treatment of the pregnant mother by salvarsan, reinforced by mercury,[4] I myself have carried out in a certain number of cases (10) and have invariably obtained healthy non-syphilitic children. The number of injections varied between four and eight, and the total amount of the drug employed in each case between 1.2 grams and 3.6 grams. Adams[5] has more recently recorded equally good results,

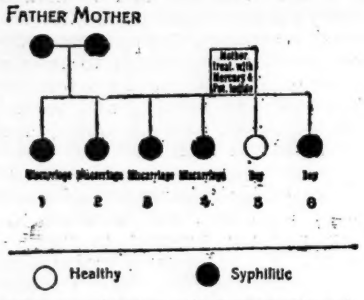

CHART 1.—Diagram showing effect of treatment of mother during pregnancy by mercury and potassium iodide internally on that and the subsequent pregnancies.

which he has obtained by antenatal treatment with salvarsan and mercury.

One of the striking results of this method of treatment is that not only is the child immediately after the course healthy and non-syphilitic, but that these women continue to bear healthy and non-syphilitic children in spite of the fact that no further therapeutic measures have been adopted. Charts 3 and 4, selected from my personal records, demonstrate this point.

It will be noted that I have only treated the mothers, and further, the mothers only during pregnancy. There are several reasons for this line of action. In the first place, my work as a pediatrist only brought me in contact with the mother, and I had seldom the opportunity of examining or interrogating the father. I was, moreover, through fear of causing family dissension, disinclined to consider the father, but experience has taught me that there is very little likelihood of any such thing resulting. Though on theoretical grounds it would seem advisable, if not imperative, that the father should be treated at the

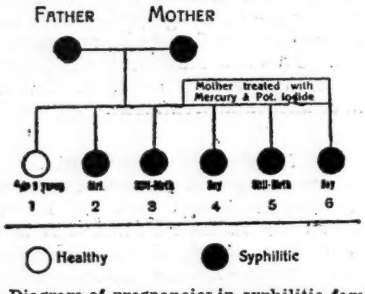

CHART 2.—Diagram of pregnancies in syphilitic family showing the absence of effect on disease by treatment of mother for prolonged period with mercury and potassium iodide internally.

same time, such does not, however, seem essential. In my opinion, at least after a mother has once borne a syphilitic child, all examples of congenital syphilis are examples of maternal infection. Consequently the prime person to be treated is the mother, and my results, I think, entirely justify this view.

Notification of Stillbirths and Miscarriages.

There remains for us to consider how to begin treatment at the earliest possible moment, in order to obtain the greatest number of healthy offspring. At present we are only touching, and can only touch, a mere fringe of the diseased families, because in a majority of these cases (that is, the mothers of syphilitic children) miscarriages, stillbirths, or a syphilitic child are the only evidences of the disease. Therefore treatment of these women is usually commenced only after a series of miscarriages, stillbirths or the birth of a definitely syphilitic child, and much valuable time, as well as potential life, is lost. For me there is only one remedy—namely, notification of all miscarriages and stillbirths, the determination of those due to syphilis by means of the Wassermann reaction, and the immediate resort to the appropriate treatment.

Notification of Venereal Disease.

Notification of stillbirths and miscarriages is simply one aspect of the general question of the notification of venereal disease; but it is an important aspect, and to my mind is warranted by the necessities of the case. In my opinion

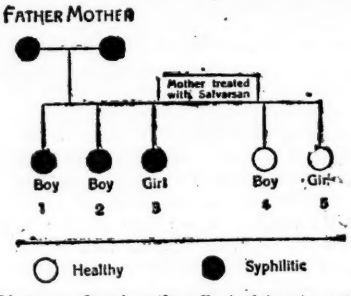

CHART 3.—Diagram showing the effect of treatment of a syphilitic mother during pregnancy by injection of salvarsan and mercury internally on that and the subsequent pregnancies.

no antivenereal campaign will be successful without such a measure, and I feel confident that sooner or later it will be adopted. The question has of course been freely discussed within recent years, and much has been said for and against the measure.

It must be admitted that syphilis, from the method of its acquisition (though we should never forget syphilis insontium), stands quite apart from other infectious diseases. Its contraction almost invariably suggests to the public mind some moral declension, and raises the fear that its notification would imply the publication of this fact to the world, and that its disclosure to the husband or wife would be the cause of much family discord. So far as the question of family discord is concerned I have little fear, as the longer I am brought in contact with this type of work the more frequently have both parents desired treatment in order to bring to an end the succession of miscarriages, stillbirths, and diseased children.

Now the popular belief that notification means the

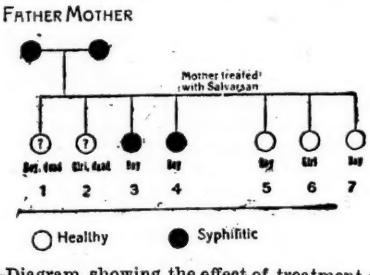

CHART 4.—Diagram showing the effect of treatment of a syphilitic mother during pregnancy by injection of salvarsan and mercury internally on that and the subsequent pregnancies.

shouting of one's malady from the house-tops should be vigorously contested. Notification means no such thing. By notification the knowledge of the nature of the illness is only shared by the patient with his medical adviser, as at present, and a third person, absolutely impartial, namely, the medical officer of health. The measure owes its value to the fact that it gives the authorities the necessary information regarding the prevalence of a particular disease, and enables them not only to find out the foci of infection, but also to offer and to insist on treatment.

One other point should not be forgotten in this discussion, and that is the inconsistency of our notification laws. One great objection which has been raised to the notification of syphilis is that it is a disease apart from all others, yet various health authorities make notifiable ophthalmia neonatorum, which bears the same relationship to gonorrhoea as congenital syphilis does to syphilis.

Gonorrhoeal ophthalmia has been made notifiable, in spite of the fact that its acquisition may be, and usually is, the result of a moral declension on the part of one or both of the child's parents, simply because its consequences far outweigh all other considerations. These consequences are blindness, and yet we know that ophthalmia neonatorum is only responsible for 20 per cent. of the blindness in childhood, whereas syphilis is responsible for 30 per cent., and, according to some authorities, even 44 per cent. of the cases in childhood.

I can well remember the time when notification of tuberculosis was first mooted, and many an interesting debate and exciting discussion I have listened to on the subject. Many prophesied that as great disasters would follow the notification of tuberculosis as are prophesied to-day will follow the notification of syphilis. The great fear was expressed that its notification would mean the public announcement of an inherent weakness in the individual or family, and that the public would not tolerate such a measure. Yet notification of tuberculosis has been adopted, and no one now feels any irksomeness or deprivation of freedom in consequence, and our only criticism is that we cannot take full advantage of the knowledge so gained. Such a criticism could not be levelled against us in connexion with syphilis. It is, in short, a rational measure, and one which has been adopted in certain progressive countries. It is already in existence in several states of America. Recently the *Social Hygiene Bulletin* published reports received from the states in which it had been longest in force, and it is interesting to find that all are pleased with the results obtained.

For me the ideal treatment of congenital syphilis means treatment of the syphilitic mother, but, in order that this may be carried out efficiently, compulsory notification is essential.

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DISCUSSION.

Dr. F. BUTCHER, in opening the discussion on the treatment of syphilis in children, said that when using hyd. c. cret. it was a matter of vital importance to ensure that the drug was perfectly pure and not oxidized, as so frequently happened in hot climates. She had not seen enteritis from the careful use of pure hyd. c. cret., although a certain amount of mild diarrhoea might occur.

Dr. AGNES DUNNETT (London) asked what was a satisfactory standard of cure in infants brought to infant welfare clinics suffering from congenital syphilis. With mercurial inunction carefully performed, symptoms often rapidly cleared up, and no fresh signs appeared up to the age of five (the age of attendance at clinics). There was no time to perform blood tests on these infants at the clinics, and it was very difficult to get them to continue attendance. What was the correct treatment for women who repeatedly miscarried, no gynaecological cause having been found and a negative Wassermann reaction having been obtained? Should they be regarded as syphilitic, in spite of the negative Wassermann, and given a course of treatment?

Professor V. PÉCHÈRE, M.D. (Brussels), congratulated the readers of the opening papers. He had been especially interested in Dr. Findlay's methods, and would like to discuss a few points, although he must crave indulgence for the poorness of his English. Dr. Morna Rawlins had said that she retained a certain amount of fear for the arsenical preparation. He personally had no fear at all in this matter and used arsenical preparations very extensively. The results of treatment of antenatal syphilis were excellent. So also was the treatment of infants with salvarsan. He employed the intramuscular method when dealing with infants, but after having seen Dr. Findlay's interesting demonstration he intended to try his technique and use the veins of the scalp. He feared, however, that although such a method might seem simple to so skilled a worker as Dr. Findlay another might find it less easy. He agreed with Dr. Rawlins about the utility of sulphur in the treatment of syphilis. He had used a new preparation—sulpharsenobillon—and had had excellent results. One of the advantages of this drug was that when given intramuscularly it gave rise to very little pain. He had employed it with great success amongst children.

Dr. E. W. G. MASTERMAN (London) expressed the disappointment he had had in treating congenital syphilitic cases with inunction of mercury, and his appreciation of the new method of injecting arsenical preparations into the veins of the head in infants. His impression was that if congenital syphilis was not cured in infancy it might be impossible to cure it later, if he might judge by the difficulty of getting a negative Wassermann reaction after even a full course of treatment. He suggested that there was at present a great difficulty in honestly reporting deaths as due to congenital syphilis or even "congenital specific disease" (a term which was now well understood by the public). If some means could be found of notifying these cases, so that the term was understood only by the medical profession and the registrar of deaths, many more true returns would be obtained.

Dr. P. A. HENDLEY (Littleport) said that he would be very interested to know what were the end results in cases of congenital syphilis treated with the arsenic compounds and mercury, especially with regard to the incidence of nervous syphilis? In the matter of notification of syphilis he had always been a warm supporter of compulsory notification, as the adoption of this course would prove an enormous help in our fight with venereal disease.

Dr. JAMES HUDSON asked what method of administration Dr. Findlay advised for children of 5. He considered the idea of compulsory notification of stillbirths an excellent one. It was an indirect method of obtaining very valuable information, and would not meet with the same opposition as notification of venereal disease. The latter measure would probably fail.

Dr. MARION MACKENZIE stated that in the Leeds Infant Hospital it had been found that novarsenobillon injected about a fingerbreadth below the crest of the ilium, in a line drawn vertically between it and the top of the great trochanter, gave rise to pain lasting only for a minute or two. Neither the small babies nor the older children had ever been known to have the restless nights, pain, etc., mentioned by Dr. Findlay, and certainly never any necrosis. Either Dr. Findlay had been unfortunate in his novarsenobillon or he had gone deeply into muscle, which had resented it. As administered above, the solution was given into a pad of fat, which was reached by going down to bone and then withdrawing the needle a little. This method had the advantage of being extremely easy and rapid. Speaking of stillbirths occurring in venereal diseases, she would like to point out that in taking a history it was important to be sure that the stillbirths were not merely due to difficult labours. Another point she should like to emphasize was the fallacy of accepting merely a negative Wassermann reaction without sufficient treatment having been given. It was very common to meet cases who were under the impression that their babies could not have syphilis owing to their own blood having been said to be negative.

Mr. REGINALD ALCOCK (Hanley) pointed out that in dealing with ante-natal treatment no reference has been made to the pregnant woman who was affected with primary syphilis in the fifth or sixth month. He had had experience of several of these cases, and had found that treatment by an initial injection of 0.45 gram of novarsenobillon, followed by six injections of 0.75 gram, and accompanied by weekly intramuscular injections of 2 grains of mercury, had given most satisfactory results. There was much objection to the notification of cases of syphilis and gonorrhoea in smaller towns, because the medical officer of health was generally a part-time man. This constituted a serious obstacle to notification. The remedy he proposed was to notify either the county medical officer or other central authority, and so preserve the requisite professional secrecy.

Mr. E. B. TURNER (President) pointed out the imperative necessity for everyone to cultivate and accentuate the power of diagnosis from clinical observation, so that no

one should rely solely on the microscope, test tube, and blood test. He explained the necessity for the earliest treatment of both syphilis and gonorrhoea on the very first appearance of the symptoms. Therefore it was most important that the general practitioner should fit himself to treat, and should treat at once, the cases which came under his observation, and thus cut down the period necessary for a complete cure from years to months. With regard to compulsory notification, he was sure that the medical profession would never consent to divulge professional confidences until it was a statutory obligation to do so, and that such legislation would not come until the public demand was imperative. He thanked the authors of the very excellent papers read and the meeting for the very helpful discussion.

Dr. FINDLAY, in replying, said: The discussion has been so full that it will be quite impossible for me with the time at my disposal to deal with all the points raised. There are, however, three questions—namely: The significance of the Wassermann reaction, the significance of miscarriages, and notification—on which I would like to say a few words. I know that in many quarters, and especially in London, the Wassermann reaction is falling out of fashion, and is not looked upon with the confidence that I think it deserves. Personally I am a firm believer in the reliability and significance of the test when properly carried out. It is not a test that one finds behaving in an erratic fashion. If clinically one has no doubts that the case is one of syphilis, then it is most unusual to get a negative reaction, and conversely if one is certain from his clinical signs that the manifestations are not syphilitic it is very rare to find a positive reaction. If the test is negative I desire very good evidence that a case is syphilitic. In one's student days one used to admire the skill with which certain of one's teachers diagnosed syphilis in the absence of definite clinical evidence, but with experience one has come to the conclusion that it is easy—unfortunately too easy—to say a case is syphilitic in nature; it is much more difficult to say the condition is not syphilitic. This brings me to the second point—the significance of miscarriages. Undoubtedly syphilis is a cause, and, unfortunately, a common cause, of miscarriages, but it is not the only one. If a woman continues to suffer from miscarriage, and gives a negative Wassermann reaction, then I think it exceedingly unlikely that syphilis is the cause, and that antisyphilitic treatment will be of any avail. From an analysis of my own cases 19 per cent. of pregnancies, whether in syphilitic families or non-syphilitic families, ended in miscarriage or stillbirth. I have listened with great interest to the various opinions expressed regarding the advisability or otherwise of notifying syphilis. Our President says that he feels that it will ultimately come, but that the public are not quite ready. Who but the medical profession are best able to judge of the advisability of the measure? It is our duty to educate the public, to show the advantages of such legislation, to dispel any misconceptions regarding its operation, and thus if we believe in it to make its adoption as soon in the future as possible. In any case, as I have said before, there is considerable inconsistency in our attitude to this question, as we are, in fact, notifying one variety on at least a consequence of venereal disease, namely, ophthalmia neonatorum. And, finally, if we turn to countries which have already adopted it, and even this notification by name—for example, certain of the United States—we find that it is giving satisfaction, and has not been followed by any of the great dangers which many of us prophesy.

Demonstrations.

In the afternoon various demonstrations were held. Dr. J. E. BARNARD, President of the Royal Microscopical Society, demonstrated the technique of dark-ground illumination for the detection of *Spirochaeta pallida;* Dr. MORNA RAWLINS showed instruments and methods of treating gonorrhoea in the female; while Colonel L. W. HARRISON discussed the question of gonorrhoea in the male. The demonstrations were very well attended.

LAPAROTOMY FOR RUPTURED UTERUS: CAESAREAN SECTION IN PLACENTA PRAEVIA.*

BY SIR JOHN BYERS, M.A., M.D., M.A.O.,
PROFESSOR OF MIDWIFERY IN THE QUEEN'S UNIVERSITY OF BELFAST.

THE following case is a good example of a spontaneous complete intraperitoneal rupture of the uterus occurring in a labour obstructed by a contracted pelvis, subsequently diagnosed, which had predisposed to the death in some form of instrumental delivery of the previous child:

Ruptured Uterus.

Mrs. C., aged 28, was taken in labour on November 24th, 1919. Her previous child was born dead, "instruments having been used." A nurse was with her, and about 1 a.m. on November 25th she was seized with severe abdominal pain, and the nurse, becoming alarmed, sent for a doctor, who, recognizing her serious condition, sent her to the Belfast Maternity Hospital, where she was admitted at 10.30 a.m., and where shortly afterwards I saw her. She was complaining of pain all over the abdomen, which on palpation was very tender. The limbs of a fetus were easily made out situated immediately under the abdominal walls on the right side, while on the left was felt the uterus containing a hard round body. Her face was drawn, and she had the "abdominal facies"; there was no pallor; the pulse was 130 and thready; the temperature was 99° F. There was no vaginal discharge, and on internal examination no presenting part was felt in the pelvis. The abdomen—as soon as the patient was anaesthetized with ether—was opened, when the placenta and all of the child except the head (which still occupied the cavity of the uterus) were found within the peritoneum. The placenta and the child were removed, when it was seen there was a rent of the uterus—about 6 in. in length—running from the right posterior surface of the fundus of the uterus down laterally through the right lower uterine segment, and it was through this opening that the child's head was easily delivered (the rest of its body and the placenta had already been extruded). The uterus was drawn well over to the left side by Dr. H. J. O'Prey, who assisted me, and the rent in the uterus was carefully sewn up, some trouble being experienced in suturing the lower and deeper parts of the tear. The abdomen was carefully sponged and then douched out with quantities of warm saline, and the abdominal wound was closed, no drainage (abdominal or pelvic) being used. The patient rallied well and made an uneventful recovery. The child—a full-term male—was dead.

In a case of rupture of the uterus of a complete nature with the child (whole or in part) or the placenta in the peritoneal cavity, the best course is, as soon as possible, to open the abdomen and to remove the child and after-birth. If the wound in the uterus is not too ragged, and can be brought together, it should be stitched up as in Caesarean section, the peritoneum cleared of blood clot, etc., and, provided no previous attempt at delivery has been made per vaginam, drainage need not be used. If, however, the edges of the uterine wound cannot be suitably opposed and stitched, and if the patient is already in a septic condition, then the whole uterus should be removed, but this procedure adds still more to the patient's risks. In the present case of ruptured uterus the symptoms were more those arising from shock than from haemorrhage.

Caesarean Section in Placenta Praevia.

Mrs. H., aged 30, was sent into the Belfast Maternity Hospital on March 26th, 1920, from the district of Magheragall, near Lisburn, co. Antrim, in her fifth pregnancy. She had experienced several attacks of haemorrhage prior to admission. Placenta praevia was diagnosed, and being near full term, "she was sent to hospital in order that an attempt might be made to save the life of the child." I saw the patient the day after she was admitted. She was in fair condition, pulse 80; the child, which was alive, was in the R.O.A. position, the head being movable above the brim. On internal examination the lower uterine segment was felt enlarged and obstructed by a soft mass, and through the os, which was slightly dilated, the placenta could be felt. Two days afterwards (March 28th) she had a sharp haemorrhage, and immediately afterwards I delivered the child by Caesarean section. There was a little trouble at first in getting the baby to breathe, but it soon came round. The mother made a rapid recovery and she and her infant—a female weighing 7 lb. 15 oz., and 20 in. long at birth—returned home in good health.

That placenta praevia is still a most formidable obstetric complication is clear from the latest statistics as published in Dr. De Lee's *Obstetrics* (third edition, 1918), where it is recorded that of 2,153 women in different centres with placenta praevia 166, or 7.73 per cent., died, while the

* Paper read at a meeting of the Ulster Branch of the British Medical Association in Belfast, June 3rd, 1920.

mortality among the infants was 61.27 per cent. The mothers succumb from bleeding, sepsis, or sometimes as a result of rupture of the uterus caused by the methods used in delivery. The children die from prematurity and from asphyxia due to placental obstruction and placental damage arising during delivery. In every case of placenta praevia we must consider the amount of the bleeding as affecting both mother and child, the length to which pregnancy has gone, and the degree of obstruction offered by the placenta in its bearing on the mother (haemorrhage and sepsis) and on the child (asphyxia). Should labour come on in a case in which the placenta is marginal or lateral and the head is presenting, rupture of the membranes followed by spontaneous or artificial (forceps) delivery is the procedure indicated, but, even in these cases, stillbirth is often the result, and there is to the mother the risk of sepsis. If the child is dead or is not viable (that is, before the thirty-sixth week) then bipolar version (the method of Braxton Hicks), bringing down one foot and leaving the case to Nature, and using traction on the leg only to control any haemorrhage, if done with full aseptic precautions, is the plan usually adopted.

In those cases, however, in which the child is viable—after the thirty-sixth week—two plans have to be considered. The first is what is called metreurysis—that is, the use of some form of rubber balloon (Champetier de Ribes's is the favourite one employed now), which acts so as to dilate the cervix, tamponade the lower uterine segment, and to induce labour, like the child's thigh and breech in Braxton Hicks's method. It was in 1887 that Mäurer introduced this manœuvre, which Dührssen, and afterwards the French school, perfected, their idea being that it saved more children than any other then existing plan of treatment. The second and more recent method for managing a case of placenta praevia, when the child is viable, is Caesarean section; and certainly, if the woman is in good condition, the child alive, if the pregnancy has gone beyond the thirty-sixth week, and if there has not been too much bleeding (so as to exhaust the mother), then Caesarean section, in my opinion, gives a better chance for both mother and child, and the case recorded is evidence in support of such a view.

Suture Material.

In both the cases recorded here the wounds—natural and artificial—were sewn up with thirty-day standardized Luken's tanned sterile catgut. In the recent discussion before the Royal Society of Medicine on "Rupture of Caesarean section scar,"[1] while attention was drawn to sepsis and faulty suturing, as causative factors in the giving way of a former Caesarean scar during a subsequent pregnancy or labour, special stress was laid upon the use of catgut, Dr. Eardley Holland pointing out that in 279 cases in which a subsequent pregnancy had gone to, or near to, full term, catgut had been employed, and in 91 silk; in the 279 catgut cases there had occurred 15 ruptures, making an incidence of 1 in 18, and in the 91 silk cases there were only two ruptures, making an incidence of 1 in 45. In other words, the liability to rupture after catgut was two and a half times the liability after silk. "Put in another way, if silk had been used instead of catgut throughout the whole series, and rupture had occurred in the same proportion as in the silk cases, the total number of ruptures would have been reduced to half"; and, in replying at the end of the discussion, Dr. Holland said the most important point revealed in his collective investigation was "the danger of catgut, and he hoped that those who used this material would renounce this dangerous practice." In reading an account of this most interesting recent discussion, I find no information supplied as to the precautions that were taken either in the selection or in the mode of preparation of the catgut used. Some of the speakers spoke of employing "ordinary" catgut (whatever that is), others of "chromic" or "chromicized," and still others of "picric" catgut; while again, one of those most experienced in doing Caesarean sections, recommended catgut for the deepest layers and for the peritoneal surface, and linen thread or fine silk for the bulk of the muscle. What one would like to ascertain is, what precautions were taken in the selection of the catgut, and as to its special preparation afterwards, so as to ensure that it was reliably aseptic and without any risk of conveying tetanus, and that it would not absorb too quickly in an organ like the uterus with such extraordinarily rapid autolysis, or self-digestion, occurring immediately after delivery. The question is, may not failure in the preparation of the catgut (how easy, in contrast, is it to sterilize by boiling, silk, linen thread, or silkworm gut!) in some such points as asepsis and standardization for too short a period of duration before absorption be the cause of the failure of catgut in certain cases of Caesarean section to hold firmly together all the parts—especially the muscle layers—of a wound made in a puerperal uterus?

In a continuous series of thirty-nine Caesarean sections at the Belfast Maternity Hospital with one death (a case septic before admission) the suture material has been (with the exception of a few cases done with Merson's "iod-aseptic thirty-day" catgut) invariably the thirty-day tanned sterile catgut of Luken. Three cases have been twice "Caesareanised," and one three times. Four cases delivered themselves naturally in subsequent pregnancies (the original Caesarean section having been done in two of them for obstruction to delivery by tumours), yet, up to the present date, we have had no ruptures, nor have we in the repeated Caesarean cases seen any indication of the old "scar." Two methods in the suturing of the uterine wound have been employed: (*a*) Continuous layer suturing by my colleague, Mr. R. J. Johnstone, F.R.C.S.Eng.; and (*b*) interrupted deep and half deep sutures, placed close together, with a continuous layer bringing over the peritoneum, so as to bury the interrupted sutures, the plan followed by myself. Like Mr. C. Martin of Birmingham, who presided at the recent discussion, I formerly used silk in gynaecological work, but I gave it up for catgut owing to the trouble it sometimes caused in hysterectomy for fibroids; on two occasions I found, some months after operation, that, owing to the silk ulcerating into the bladder from the uterine stump, it formed the nucleus of a secondary calculus, while I also thought that some obscure cases of sepsis under the same circumstances were also due to the use of silk; at all events, neither of these unpleasant occurrences have since followed the substitution of catgut for silk. What we all want to get is clear scientific as well as clinical evidence to guide us as to whether silk, silkworm, linen thread, or properly prepared aseptic catgut is the proper suture material to use in Caesarean section.

P.S.—In reply to a letter of mine, Dr. Holland tells me in a courteous communication, dated June 18th, 1920, "The fact has come out that the catgut which was used in all the eighteen cases in which rupture of the scar subsequently occurred was chromic."

REFERENCE.

[1] Vide reports in *British Medical Journal*, May 22nd, 1920; and *Lancet*, May 15th, 1920.

THE RELATIONS OF DISEASE AND INJURY.*

BY

A. McKENDRICK, F.R.C.S.Ed., D.P.H.

On analysing the last 500 cases referred for examination under the Workmen's Compensation Act I find that in forty (that is 8 per cent.) of these the main question at issue was the relation of disease to the injuries received.

Only if a relation exists is the employer held liable, and it is easier to assert than to disprove a relation. The cases are certainly medico-legal, but the medical examiner must keep as far away from the legal aspect as possible. The lawyer has a duty to his client, but the duty of the medical examiner is to guide the court and not to influence it. This can only be done by a rigid adherence to known medical facts. It is the elasticity of the medical witnesses' imagination which has merited the phrase "doctors differ." It is the forced admission in court of "might possibly" which gives to the shrewd lawyer his chance to win, altogether apart from the actual merits of the case.

I have heard half a dozen different opinions expressed in court on the same case by six different doctors on this question of relation of disease to an injury. All were agreed that the man was suffering from disease, and all were aware of the alleged accident. One maintained that the disease was directly attributable to accident, another

* A paper read before the Edinburgh Pathological Club.

that the disease might not have been caused but had certainly been aggravated by the accident, while a third explained that the accident had acted as a kind of connecting link in the vicious circle. The fourth admitted that the injury "might possibly" have had some bearing on the disease, although he personally did not think so. The fifth said that the effects, if any, of the injury on the disease were negligible, while the sixth maintained that no relation existed between the disease and the injury. What chance had judge or jury, in the face of such conflicting evidence, of coming to a fair and just decision?

Even a little experience of work in court will suffice to convince anyone of the importance of examining the facts critically from all different points of view before expressing an opinion thereupon. The medical witness is expected to be able to answer questions on the finer points of anatomy, physiology, and pathology. I have been cross-questioned on the subject of fluid pressures. This was in a case where a blood vessel in the testicle was said to have been ruptured as a result of bodily strain. How does the pressure vary in different parts of a system of tubes of variable cross sectional area? If increased rate of flow results in a diminution in pressure, how could a strain which causes increased rate of flow, cause at the same time an increase in the pressure? The medical witness must be prepared to answer such questions.

What is wanted is solid fact, or as near an approach to it as possible. It is no use, when asked a direct question, to answer, "Not in my experience," or "That is my experience." Experience is of value only if tempered with judgement. It is the experience of every medical man that his patient has always some suggestion to offer as to how or why he is suffering from any disease. More especially is this the case where there is tuberculous disease of any bone or joint. It is almost invariably attributed by the patient to some trivial injury. So usual is this that the relation suggested by the patient has come to be accepted as fact by the doctor.

I have watched cases during their course in which such a relation was beyond doubt, but in all the injury was of such a nature as to afford the tubercle bacillus the many weeks of absolutely undisturbed rest necessary for its incubation and growth. In the great majority of cases, however, there is no relation between the injury and the disease, the injury having been far too trivial to afford the tubercle bacillus its necessary prolonged period of absolute rest during its incubation.

Sufficient attention has not been paid to the factor of time. When a tissue is injured there is an effusion, usually of blood, perhaps of serum only. If the circulation is rapidly re-established, none but the most virulent organisms have any chance of establishing themselves. Absorption or resolution is by the lymph stream. Take the slightest form of injury, namely, such slight local exposure to cold as may result from paddling in the water. The circulation is temporarily arrested, there is effusion of serum, and probably diapedesis. Any pyogenic organisms in the blood stream may thus become extravascular, and although the circulation is rapidly re-established the organisms remain outside the blood vessels, and may successfully establish themselves before they are carried away in the more slowly moving lymph stream. If the organisms had been tubercle bacilli they would not have had the slightest chance of development.

The period necessary for the establishment of the acute pyogenic organisms has been short, the effusion has not been of sufficient degree appreciably to increase the pressure locally at the time of exposure, hence no pain. The organisms during their rapid multiplication have not even increased the local pressure before giving off their toxins. Here constitutional disturbance ensues before there is any local evidence of injury or disease. It is this time factor which gives to the two types of inflammation their characteristic clinical signs, and further, it is the time factor which will have to be studied in a consideration of aggravation of existing disease as the result of injury.

In acute inflammations the result of injury there may or may not be an initial period of freedom from pain, but once pain starts it becomes progressively worse. The more rapid the effusion the more severe the pain. How different is the picture presented by tuberculous infection! The injury has been of such a nature as to result in an effusion of such dimensions that its absorption cannot be completed for many weeks. There is bound to be corresponding pain. It may not be very severe, but it is continuous, and after the tuberculous dépôt is fully established and spreading occurs into the neighbouring tissues there is an increase in the severity of the pain. If the lesion be primarily in a joint, there is stiffness, limp, or alteration in the shape of the joint more than actual pain. If, on the other hand, the focus of infection is within the bone near a joint, there is stiffness or limp for a long time, and it is only when the joint cavity is invaded that the characteristic "starting pains at night" are exhibited. The whole process takes months instead of days, or even hours, as may be the case with pyogenic infections. It might be said truly that parents usually seek advice rather because they notice a difference in their offspring than because there has been any complaint of pain or even stiffness.

It might be said that the injuries which predispose to the onset of tuberculous infection are those in which there is either a large effusion or those in which absorption is extremely slow. It is for this reason that tuberculous disease frequently follows sprain of the ankle but seldom follows fracture. In sprain there is a large effusion into the joint cavity, absorption is very slow, and the tubercle bacilli find in the effused material a suitable nidus in which they can grow undisturbed. There is certainly an effusion of blood after fracture at the ankle joint, but this effusion soon becomes permeated by young and vigorous capillaries. Amidst this scene of active reconstruction and repair the slow-growing tubercle bacilli have little if any chance of establishing a dépôt.

A much more difficult problem is presented when we seek to investigate the question of aggravation of existing disease by injury. Here again we must visualize the pathological changes occurring in the tissues and attempt to pair each symptom with its pathological cause.

It is surprising how unobserving most people are with regard to their persons, and how frequently a "lump" which may have existed for years is only discovered by the person after some injury in the neighbourhood; they usually insist that the lump is a result of the accident. In the same way a slight injury may be the means of calling a person's attention to a part which is really the site of disease. This danger of being biassed at the outset by the patient's own statement, in however good faith it may be made, is one of the greatest difficulties in the investigation. The facts must be carefully weighed, and the opinion of the patient disregarded. Here again tuberculous disease looms largely. Fortunately the time factor usually gives information which can be relied upon.

It is reasonable to start with the assumption that an already diseased tissue will be more easily hurt than a healthy tissue. It is reasonable also to infer that the pain experienced will be out of proportion to the violence applied. The pain is practically the same as that which would have been caused by a greater degree of violence upon healthy tissue. It is caused by a local increase in pressure due to effusion. Absorption is slower than normal, and accordingly the pain will continue.

The time of onset of symptoms is another difficulty present, in the question of aggravation of disease by injury. A man is at work, he may be lifting no heavier a weight than he is accustomed to, he has sudden pain in the abdomen, is taken to hospital, and immediate operation shows a ruptured appendix or duodenal ulcer. A workman may have a sudden haemoptysis, fatal or non-fatal, from an aneurysm or from old fibroid phthisis. Whatever he happened to have been doing at the time is most certainly blamed for the occurrence. Such signs or symptoms might easily have made their appearance while the person was at rest in bed. In fact they usually do occur when the patient is doing his daily or nightly routine. To attribute the sign or symptom to strain is quite reasonable from the patient's point of view, but is it right? Is the employer to be held liable for the occurrence, and must he bear the expense of the workman's incapacity or even death? This is a question upon which the medical examiner is called upon to express his opinion.

There are several familiar categories under which the question of relation may be considered.

Disease Caused by Injury.

Cases under this heading are common; the nature of the injury, the time of onset of the symptoms, the course of the disease, and the facts elicited on examination, present a complete clinical picture, which coincide with the known pathological changes which have been taking place in the tissues. The disease in such cases is usually pyogenic in nature and the injury has acted as the predisposing cause.

Disease Aggravated by Injury.

There are many who would say that any disease is certain to be aggravated by any injury, no matter how far removed the site of injury may be from the seat of disease. The argument is only good in so far as it is wellnigh impossible to prove the negative. Cases arising under the Workmen's Compensation Act demand that a more definite relation shall be proved between the injury and existing disease. Sentiment need not enter into the question, because the workman is provided for under the Workmen's Compensation Act in the case of injury, and under the National Insurance Act for disease.

The following is a case of aggravation:

On June 28th, 1912, J. L., a miner aged 50, was lifting a hutch when he slipped and fell on his buttocks; pain was so severe that he could not walk after the accident. He was confined to bed for a fortnight.

On August 4th he said he had never been free from shooting pains in thigh and calf since the accident. *X*-ray examination showed right sacro-iliac disease. On June 5th, 1913, the *x* ray showed disease to be more advanced, and commencing on the left side.

The company was advised that this was a case of disease aggravated by injury.

The points to be noted in the above case are as follows: (1) Pain at time of accident out of all proportion to the violence; (2) continuance of pain, so severe as to keep him in bed for fourteen days; (3) neuralgic pain in sciatic distribution severe since accident; (4) the man had a previous history of sciatica, off and on, for the previous eighteen months.

In the next case it was attempted to prove that disease had been aggravated by an injury.

In February, 1913, a car conductor says he knocked his testicles against the hand rail on his car. He worked on for two days and had no inconvenience. Three days after the knock the left testicle swelled. There was no pain, and he remained at work for a week. He was then off work for five weeks. He returned to work and worked for a month, then went to the infirmary, where the testicle was removed and proved gummatous. He had suffered from syphilis seven years previously.

The points in this case are: (1) No pain at time of accident; (2) no discoloration at any time; (3) swelling unaccompanied by pain.

The company was advised in this case that the condition was due to disease and that no aggravation by injury could be proved.

Disease Causing Prolongation of Convalescence.

This is fairly common. In fact, it might be said that, other things being equal, the greater the freedom from disease the shorter the convalescence after injury. The following is an extreme case and one in which the company was advised that the prolonged incapacity was attributable to accident:

W. M. was knocked down by a bread van on December 20th, 1916. He was taken to hospital with the right knee much swollen. There was extensive bruising all over the body. There was bleeding from the bowel. On January 30th, 1917, the knee had gone septic; the patient was transferred to the surgical ward. He was kept in hospital for nine months. On October 4th, 1917, he had almost totally recovered.

This case seems almost quite straightforward—serious injury, long time for recovery; and it is straightforward from the medical point of view. The insurance company, however, always pays the closest attention to the minute details of the accident. In this case the bread van merely brushed against the man, and he fell rather from fright than from violence. The violence was negligible. In fact, it was not until the knee became septic that he suffered any pain. He stated voluntarily that he was a bleeder; and it is interesting to note, in passing, that his father died from haemophilia. He is unaware of any history of bleeding on the mother's side.

No Relationship between Disease and Injury.

The cases falling under this head are so controversial that only a few which have been decided in court will be quoted.

A. P., a miner, was lifting a derailed hutch on April 26th, 1914. He had no pain, but shortly afterwards, during the course of the day, had pain in the left testicle. A doctor was called in, who advised rest in bed for three weeks. The scrotum was lanced in May.

On June 2nd the case was reported to the insurance company by the doctor as an accident under the Workmen's Compensation Act. The diagnosis was rupture of blood vessel in testicle as the result of strain caused by lifting a hutch. On examination on June 12th the left testicle and epididymis were seen to be swollen and nodular; globus minor especially enlarged; cord thickened and nodular. The seminal vesicles on both sides were enlarged and nodular, worse on the left. Discharge from the urethra on direct smear showed no tubercle bacilli; no gonococci, but many staphylococci.

The points in this case were: (1) No pain at time of alleged accident; (2) doctor opened abscess ten days after alleged accident; (3) full blown tuberculous disease of the whole genital tract forty-seven days after alleged accident. In this case the court decided that the accident as a cause of incapacity had not been proved.

Here is another case of tuberculosis, but of the lungs.

T. H., a miner, in December, 1915, received a blow on the back from a pit prop. He worked on till May, 1916, when he lay off work, and was certified by his doctor as suffering from "heart-strain," as the result of his accident of the previous December. He was off work till November, 1916 (five months).

On September 5th, 1918, after levering up a stone, he spat up a mouthful of blood. He stopped work. On September 27th he complained of ill health, and that he had always been liable to colds in the chest. On examination there was marked evidence of fibroid phthisis; waterfall ribs; mottled roots; small pendent heart; left dome of diaphragm stationary; right apex dull +++; left apex ++. Clinical signs of fibroid phthisis.

On May 31st, 1919, both domes were poor but equal; otherwise *in statu quo*.

In this case the court decided that the spitting of blood might possibly have been due to exertion, but that the effects of the loss of blood had passed off, and that the man was not entitled to compensation under the Workmen's Compensation Act for his ill health due to fibroid phthisis.

Here is a case of tuberculous disease of a joint.

J. B., aged 15, bruised his right thigh on June 6th, 1918. It was painful at the time, but this soon passed off. On June 13th he had sudden pain in the hip; a doctor was called in, who sent him to hospital.

July 1st, 1918. Starting pains at night; put on extension. On July 16th *x* rays showed tuberculous hip.

May 6th, 1919. Disorganization of head of femur; ankylosis; shortening of limb. Marked tuberculosis of chest.

In this case the court decided that no accident as the cause of incapacity had been proved.

The points in the case were: (1) History of the accident indefinite, the boy giving different accounts to different people; witnesses giving different accounts. (2) Total freedom from pain between alleged accident and onset of pain. (3) Forty days after alleged accident, definite bone destruction.

Many more cases could be quoted of herniae, etc., but sufficient, I think, has been said to show the importance of sticking to hard solid facts. The time factor is one on which the court usually places great weight.

THE London County Council, which has a standing order requiring women employees, with certain exceptions, to resign their appointments on marriage, has agreed that it shall be permissible to employ married women doctors for a period expiring not later than October 21st, 1920, and has instructed a committee to report further on the question of the permanent employment of such women doctors before the end of that period.

ACCORDING to the report of the Special Schools After-care Subcommittee, of 2,282 mentally defectives formerly attending the City of Birmingham's special schools 950 are doing remunerative work; of these 839 are earning wages which average 28s. 1d. per week; 519 are males earning from 7s. to £6 a week (average 31s. 7d.), and 320 are females, earning from 6s. to 50s. per week (average 22s. 6d.). At ages over 30 only 14 males and 1 female are earning wages.

MEAT DIET IN SPRUE.

BY

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THE following two cases are of interest on account of the manner in which they illustrate the value of a pure meat diet, even in the most advanced and chronic stages of sprue.

CASE I.

A woman, aged 47, married, one child, was admitted to Duff House in 1919. She had been resident in India, with brief intervals, since 1894. She had attacks of sprue-like diarrhoea in 1912 and 1916, each lasting several months, the latter accompanied by soreness of the mouth. In 1918 diarrhoea recurred with large whitish, pasty motions, ulcerated mouth, and emaciation. On milk diet there was some improvement, the buccal ulcers healing and the motions becoming more normal, but no gain in weight followed; the appetite was poor, and flatulence and nausea troublesome. She came to England in February, 1919, but the mouth again became sore, diarrhoea continued, and she grew progressively weaker.

Examination on Admission.

Height 5 ft. 6 in.; weight 5 st. 8¾ lb. The emaciation was extreme. The skin, dry, harsh, and of a yellowish tint, hung in loose folds or formed deep wrinkles as in advanced old age. The mucosae were pale. The tongue was small, pointed, fissured, and of a reddish-yellow colour, showing patches denuded of epithelium which were tender, mastication of hot, acid, or pungent foods causing acute pain. The abdomen was wrinkled and of a doughy consistency. Blood pressure 85 mm. Hg. Blood examination showed haemoglobin 70 per cent.; red corpuscles 1,600,000 and white 2,400 per c.mm.; colour index 2.2. In a stained blood film the red corpuscles were paler than normal and showed poikilocytosis.

The gastric contents, one hour after a test breakfast, gave a total acidity of 36, with 0.05 per cent. of active chlorides. Free HCl was present. The digestion of fibrin was hastened by the addition of 0.4 per cent. HCl. *X*-ray examination after a barium meal showed that the stomach, slightly hypotonic and elongated, exhibited active peristalsis, and emptied in four hours. There was general delay in the colon, which was dilated throughout its length.

There were, as a rule, two or three motions daily; occasionally more. The stools varied in colour from yellowish-brown to slate grey, being sometimes pultaceous and bulky; at other times liquid or semi-liquid. The average total weight of faeces was about 300 grams a day. The reaction was usually acid, but occasionally alkaline. Microscopically abundant fat droplets and fatty acid crystals were visible. Mr. A. J. Leigh, B.Sc., tested the degree of absorption of fat and protein by analysis of the faeces for three days, during which a standard diet (Schmidt's) was taken. Both protein and fat absorption were found to be deficient, 22 per cent. of food protein and 51 per cent. of food fat appearing in the faeces; the percentage of fat in the dried faeces was 63. The tryptic value of the faeces was somewhat reduced, the figure obtained being 17 instead of the normal 25. Bacteriological examination of the stools showed the presence of *B. lactis aërogenes* in large numbers, *B. coli*, and a few streptococcal chains.

Treatment.

The patient was kept at rest in bed, and, on completion of the preliminary investigations was given a strict meat diet; 1 lb. 9 oz. of beef was taken daily, the meat being minced, sieved, pressed into cakes, lightly cooked with 2 oz. of suet, and taken in five meals of 5 oz. each. After a few days the quantity was increased to 1 lb. 14 oz., given in five meals of 6 oz. Hot water was taken three times daily between meals; tea in the early morning and coffee at 4 p.m., with saccharine if desired, but no milk, cream, or sugar. This diet was subsequently modified as follows:

2nd week of diet.—½ lb. of strawberries with cream daily; underdone cold roast beef substituted for one feed of meat cakes.

3rd week.—5 oz. fat mutton chop and 6 oz. of sweetbread substituted for equivalent quantities of beef; beef given cold at two meals, minced at one, and in cakes with clear gravy at another; two poached eggs and ½ lb. of strawberries with cream added.

4th week.—Egg flip made with two eggs given three times daily, and ½ lb. of strawberries added.

5th week.—Two slices of bread-and-butter, and strawberries increased to 1½ lb. daily.

6th week.—Two rusks and butter added. Cold beef 8 oz. substituted for remaining feed of beef cakes.

7th week.—On exacerbation of symptoms all starchy foods—that is, bread, toast, and rusks—omitted, improvement following. An additional egg given.

9th week.—Raspberries, grapes, pears, or orange juice substituted for strawberries when latter not available.

10th week.—Fruit omitted on account of diarrhoea.

12th to 14th week.—Eight bananas added gradually.

15th week.—4 oz. of fish with melted butter added at two meals, and a Callard's diabetic biscuit at tea.

16th week.—Cold ham substituted for mince at one meal, and two diabetic biscuits given at tea.

17th week.—Two bananas added.

18th week.—A little starch given again, as rusks and butter at tea. Meat and eggs at last meal reduced to 3 oz. and to one respectively.

19th week.—Number of meals reduced to four daily.

20th week.—2 oz. of bread substituted for rusks at tea, and milk pudding at lunch.

21st week.—2 oz. of toast added at breakfast, and milk pudding with evening meal. One egg flip omitted.

22nd week.—A diet having a heat value of about 2,600 calories—for example:

Breakfast.—Porridge with cream; egg or fish and bacon, toast and butter, tea.

Egg flip and coffee at 12 o'clock.

Lunch.—Joint, sweetbread, or bird, potato, greens; milk, steamed or suet pudding and baked apple with cream; toast and butter; two bananas; water or soda water.

Tea.—Bread-and-butter, biscuits, sponge-cake, tea and cream.

Dinner.—Similar to lunch, but with vegetable or milk soup, fish and jelly added.

The dietetic treatment was supplemented by intestinal lavage, which was employed on alternate days during the first two months of treatment, and proved of value in relieving the irritation of the lower bowel. In the later stages a course of massage and the application of a weak faradic current helped to restore the muscular tone.

Medicinal treatment was for the most part symptomatic only with the exception of a course of yellow santonin, which was given at the start in doses of 5 grains twice daily as recommended by Begg,[1] olive oil being employed as a vehicle. In this case no improvement appeared during its use for four weeks, and it was then omitted. Excessive diarrhoea was controlled by means of opium and bismuth. Flatulent distension, an especially distressing symptom, was relieved by the application of hot packs to the abdomen and by a carminative mixture. At an early period threatened collapse was treated by the addition of ½ oz. of brandy to each egg flip.

Progress.

During the first few weeks the weight dropped to 5 st. 2¾ lb. Weakness and prostration were extreme, and two weeks after admission a short attack of tetany occurred, the hands and arms being involved. The institution of the pure meat diet was shortly followed by a rally. The weekly blood tests first showed an improvement, then the stools; the weight began to rise and the superficial fat to return. Physical and mental energy increased, the tongue lost its soreness, and the gastro-intestinal symptoms subsided. The improvement was maintained continuously with the exception of a few temporary relapses, the most severe of which followed the premature addition of starch food to the diet, and cleared up on its omission.

The diminution in the bulk of the stools was striking. The average weight of faeces a day in the second week after admission was 293 grams, about 2,000 calories of food being taken. The daily average in the sixth week had risen to 603 grams. At this time the amount of food taken was 3,600 calories, and was not well borne, owing to the premature addition of starches which were omitted at the end of the week; the quantity of faeces immediately fell to 370 grams per day. These figures may be contrasted with those of three months later, in the last four weeks of the patient's stay, when the average total daily weight of the faeces was 89 grams, rather below the normal figure for her size, although over 4,000 calories of food were being taken.

On leaving Duff House after a stay of five months there were no symptoms. The patient looked healthy and well-nourished, and both mental and physical vigour were fully restored. The weight had risen from 5 st. 8¾ lb. to 8 st. 7½ lb., an increase of 2 st. 12¾ lb. The haemoglobin content of the blood had risen to 78 per cent., the red corpuscles numbered 4,500,000, and the white corpuscles 8,000. The bowels were opened naturally and regularly once a day, and an approximately normal diet was taken.

CASE II.

A woman, unmarried, aged 38, when admitted, complained of a "drawing" sensation in the upper limbs, headache, lethargy, fatigue, tired feelings across the middle and discomfort in lower abdomen, sore tongue, irregular action of the bowels, and amenorrhoea. She had had a tendency to pass large pale stools since childhood. Between 15 and 17 she suffered from persistently sore tongue. At the age of 19 (1898) she had a slight attack of malaria in the West Indies. In 1907–9 she suffered from flatulence, discomfort in the lower abdomen, irregularity of bowels, and amenorrhoea. In 1909 a diagnosis was made of colitis and anaemia, with a suggestion of Hirschsprung's disease; she was treated by restriction of fats, and the bowels became regular and amenorrhoea was less, but anaemia persisted. Pyorrhoea alveolaris was found, and carious teeth extracted. Streptococci were cultivated from the stools and a vaccine given. Anaemia gradually disappeared. At this time she weighed 8 st. 3 lb., and she describes herself as fat and well. In 1916 there was recrudescence of gastro-intestinal symptoms, with loss of weight, sore tongue, and amenorrhoea. Contraction of the hands on one occasion. Treatment by frequent doses of calomel and diet of peptonized milk was of no avail, and her weight fell to 6 st. 2 lb. Two attacks of tetany during March, 1917, recurring in July and October.

Examination on Admission (1917).

Weight 5 st. 12½ lb. Lower teeth deficient. Mucous membrane of tongue and mouth red and sore with a number of irregular ulcers. Blood 64 per cent. haemoglobin, 3,960,000 red and 2,200 white cells per c.mm., giving a colour index of 0.7. Differential leucocyte count—polymorphonuclears 82 per cent., small lymphocytes 13.8 per cent., large lymphocytes 2.5 per cent., eosinophils 1.5 per cent. and basophils 0.2 per cent. The gastric contents one hour after test meals showed low total acidity with deficiency of active chlorides. A trace of free HCl

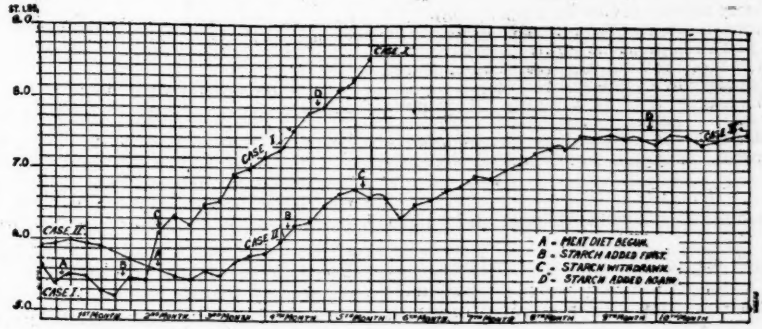
present on each occasion. Digestion of fibrin aided by addition of dilute HCl. The stomach was able to produce more acid slowly, for a sample taken four hours after a meal showed a total acidity of 105 with 0.16 per cent. of active chlorides. Microscopical examination showed an excess of yeast and no sarcinae.

X-ray examination after a barium meal showed that the stomach was hypertonic, and that it emptied in four hours. There was some ileal stasis, chyme being present in the terminal ileum six hours after the stomach was empty. The terminal part of the ileum was seen to enter the caecum high up, and appeared to be curled up in an unusual way. The base of the appendix was dilated, but the rest of the lumen was not penetrated by the barium. The colon was large, but not enormous, nor especially sluggish; segmentation was good. The rectum was congested and irritable, but no definite lesion or anal fissure could be seen.

There were usually two or three motions daily, occasionally more, the total weight averaging about 245 grams a day. The stools were light in colour, liquid or semi-liquid, and acid. The absorption of protein was diminished (14 per cent. lost). The absorption of fat was also deficient (20 per cent. appearing in the motions). Diastase and trypsin were present in normal quantity. The iodoform and methylene blue capsule tests for absence of pancreatic juice were negative. The diastatic reaction of the urine, which is said to be increased in active disease of the pancreas, was normal. The proportion of ethereal to organic sulphates was only slightly above the normal. The amount of nitrogen in the urine was small—7 grams in twenty-four hours. The uric acid was normal—0.6 gram. Indican was present on one occasion only. Bacteriological examination of the faeces showed a predominance of Gram-negative organisms. Of the Gram-positive group there were a few streptococcal chains and very scanty delicate rods which might be *B. bifidus*; monilia or saccharomyces were not seen. Plate cultures gave numerous colonies of the *B. coli* group.

Treatment.

During the preliminary investigations a light non-irritating diet was given, and symptoms relieved as far as possible. Various methods of treatment, including lavage of the stomach and intestines, were then tried for some weeks without success. In the second month a pure meat diet was instituted, beef cakes, prepared as in Case I, being employed. The food value was 1,050 calories a day at first, rising in a fortnight to 1,750. A mixture containing bismuth and opium was taken, at first every six hours, later once or twice daily. The attacks of tetany were controlled by a bromide and valerian mixture and by intestinal lavage.



Progress.

With the introduction of an exclusive meat diet definite improvement began. The severer attacks of tetany ceased. The rectal soreness disappeared rapidly, and the condition of the mouth gradually became normal. The motions became less bulky, and at times less fluid. The haemoglobin content of the blood rose and the weight increased. The further progress is described in the following brief monthly notes:

4th month.—Mouth better. Some indigestion, with at times slight stiffness of arms; latter relieved by enema or by sodium bromide. Bismuth and opium mixture omitted; no diarrhoea. Blood 80 per cent. haemoglobin, red corpuscles 4,110,000 per c.mm. Getting up daily. Weight increasing. Some meat replaced by bacon. Some carbohydrate gradually added to diet, also coffee and cream.

5th month.—Carbohydrate continued. Tendency to sore tongue and later some soreness of rectum; motions more frequent. Lost 1½ lb. in one week. On stopping carbohydrate, coffee, and cream, improvement at once followed. Some diabetic bread and butter allowed.

6th month.—All beef cake gradually replaced by beef. Two oranges daily. Good progress. Still much mucus in stools.

7th month.—Stronger. Walked one mile daily. Weight 7 st. Blood 94 per cent. haemoglobin; red corpuscles 4,580,000 per c.mm. Less mucus in stools. General character of motions improving. Oranges replaced by strawberries. Egg tried but discontinued, as indigestion followed.

8th month.—Test meals showed normal gastric juice. *X* rays showed that ileum and caecum were moderately mobile. Still ileal stasis. Rate of passage through colon normal. By end of month formed motions began to appear, but with some mucus.

9th month.—Starch again (two biscuits for tea). Intestinal douches omitted. Grapes given instead of strawberries. Some meat replaced by fish. Faecal analysis showed normal assimilation of fat and protein.

10th month.—General improvement continued. Weight 7 st. 6 lb. Mucus often absent from stools, which were otherwise normal.

11th month.—Continued improvement. Daily value of food about 2,250 calories. Weight still increasing. Recurrence of menstruation after amenorrhoea of eleven months' duration. On leaving Duff House at the end of this month there were no symptoms and the bowels were opened once daily. The average weight of motions had fallen from 250 to 100 grams a day, a normal amount for her size. The weight was 7 st. 6½ lb., representing a gain of 1 st. 8½ lb. since admission.

In Case II symptoms suggestive of sprue had been observed in England at intervals from childhood onward, so that a diagnosis of coeliac disease dating from infancy also suggests itself. However, the clinical resemblance between the two diseases, the possibility, indeed, of their identity as suggested by Still,[2] and the occurrence of sprue in other cases in which the patient has not been abroad, justify, in my opinion, the inclusion of the two cases in the same category.

A circumstance worthy of note is the occurrence in the course of each case of tetany, a complication recently described by Surgeon Captain Bassett-Smith, R.N.[3]

In both patients a milk diet had previously failed to cure the disease. The order in which foods were introduced in the diet as progress was made was beef, other meats, fruit (strawberries if available), cream, eggs (if well borne), fish, diabetic biscuits and bread, starchy foods. In both patients the premature addition of carbohydrates, other than those in fruit, was followed by relapse.

Valuable as a pure meat diet has proved, in certain cases its use is rendered difficult or even impossible by the patient's distaste for the beef cakes, or for much meat in any form. Here temperament will often prove the decisive factor, one individual overcoming the aversion by courage and force of character, another proving incapable of the necessary mental effort. Sometimes continued persuasion and infinite patience on the part of nurse and physician are needed.

Manson-Bahr[4] and many other observers have testified to the value of a pure meat diet in certain cases of sprue, but I venture to believe that the extreme initial emaciation and exhaustion of these two patients, together with the steady progress and complete recovery, are sufficiently remarkable to prove of interest to those who may be called upon to treat this, at times, very intractable condition.

I am indebted to Dr. E. I. Spriggs, under whose supervising care the cases were, for permission to publish them. Case I was in my immediate charge throughout. The account of Case II is derived from notes taken by Dr. Pickering, Dr. Long, and Dr. Mary Fergusson.

REFERENCES.

[1] Begg, *Lancet*, 1898, vol. i, p. 185. [2] Still, Ibid., August, 1918, p. 165. [3] Bassett-Smith, Ibid., February, 1919, p. 178. [4] Manson-Bahr, Report on Researches on Sprue in Ceylon, Cambridge, 1915, p. 101.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE PULMONARY OEDEMA OR "ACUTE SUFFOCATIVE CATARRH."

IN view of the cases of the above condition recently described in the JOURNAL, the two following cases may be of interest:

Case 1.—I was called at 5 a.m. to attend a domestic servant, aged about 20, who had previously been quite healthy. She had had much hard work in attending to an old lady suffering from cancer, whose death the day before had been a great shock to her. She stated that she had wakened suddenly with a feeling of suffocation. I found her quite conscious, with flushed face; rapid laboured respiration, pulse about 120; a pale pink froth was welling up into the mouth. Numerous crepitations were heard all over the chest on auscultation. She was able to cough a little, but brought up froth only, no fluid. She doubtless had oedema of the lungs, but the condition was unknown to me at the time. I concluded that the heart had suddenly begun to fail, owing probably to the strain through which she had been passing. With a little difficulty the patient could swallow fluid, and brandy was given by the mouth.

Strychnine gr. $\frac{1}{30}$ and digitalin gr. $\frac{1}{100}$ were given hypodermically, and camphor in olive oil was administered later in the day. As the condition did not improve, pituitrin 1 c.cm. was injected subcutaneously, but without any appreciable result. The patient's condition remained about the same for more than thirty-six hours, when she became unconscious and died. Neither morphine nor atropine was administered.

Case 2.—I had been attending a married woman of fifty since December 24th, 1919, for symptoms of nervous exhaustion, which I attributed partly to the menopause, and partly to overwork. She had severe headaches, sleeplessness, anorexia, tremors, and coldness of the extremities; the reflexes were increased. Her heart sounds were normal, with the exception of a slight accentuation of the second sound in the aortic area. There was no increase in cardiac dullness. The radial arteries were slightly thickened. The urine was free from albumin and sugar. She got up, much better, after a week's rest. Shortly afterwards she developed a slight catarrh of the upper respiratory passages, with slight expectoration. So far as auscultation could show this had cleared by January 7th. On January 18th she had ventured out for the first time, had told her husband that she was feeling "grand," and had had a hearty tea, when at 8.30 p.m. she suddenly remarked that she was dying, and her son said he noticed a "rattle in her throat." When I arrived, at 9 p.m., she was unconscious; her face was ashen-grey. Auscultation revealed numerous moist sounds, fine and coarse, on both sides of the chest, and on turning her on her side blood-stained fluid, not froth, poured in a steady stream on to the floor, coming from mouth and nose. The heart was beating regularly and strongly (110) without any modification of the sounds, and gave the impression of a normal heart fighting against obstruction. The patient's position was altered, to allow of free drainage from the lungs. I hesitated to give morphine to an unconscious woman, but gave atropine sulphate gr. $\frac{1}{30}$ hypodermically, kept her warm, and continued the effort to empty the lungs. A second dose of atropine sulphate gr. $\frac{1}{100}$ was given half an hour later. Occasional auscultation showed that the lungs were rapidly becoming waterlogged. The heart-beats became more frequent, then irregular, and the patient died at 10 p.m., just an hour and a half from the onset of the symptoms. A good deal of the fluid was lost, but I collected about two pints, unfortunately in an unsterilized vessel.

Dr. P. L. Sutherland reported it to be a highly albuminous fluid of specific gravity 1016. The centrifuged deposit consisted chiefly of red blood cells, and contained many Gram-negative bacilli and a few diplococci. A typical *B. coli* was obtained by culture.

Remarks.

1. There was an element of nervous exhaustion in both cases.

2. The heart did not strike one as being primarily at fault in the second case, and there were no adequate grounds to say that the condition had a cardiac origin in the first.

3. Case 1 occurred in a young woman in whom sclerotic changes were unlikely to have taken place.

The condition is described in Powell and Hartley's *Diseases of the Lungs and Pleurae*, fifth edition, p. 316.

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FATAL HEPATIC CIRRHOSIS IN A YOUNG MAN.

W. H., a man aged 21, had served some years in the army. His parents stated that he had always had good health and had not drunk to excess. He had not suffered from indigestion. He awoke at 2.30 a.m. on July 1st with severe pain in the left side of the abdomen. He immediately vomited bright red blood. At noon on the same day he had another attack of haematemesis, and was brought to hospital during the afternoon. At the casualty entrance he had a third severe attack of haematemesis.

When I saw him he was very pale and collapsed; the pulse was 110 and thready, the temperature 98°. He vomited 12 oz. of bright red blood at 4 p.m., had another slight attack at 8 p.m., and died at 3.30 a.m. on July 2nd after only twenty-five hours' illness.

I performed a *post-mortem* examination and found the liver to be in a state of advanced atrophic cirrhosis. It was pale, shrunken, had the typical "hobnail" appearance, and only weighed 28 oz. The stomach was full of blood. The cardiac end was eroded in places, but there was no definite ulcer. The spleen was enlarged and congested, weighing 17 oz. Both lungs showed old tuberculosis scarring, but all other organs appeared normal.

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THE first Latin-American Odontological Congress will be held in September next at Montevideo under the auspices of Dr. Balthazar Brum, President of the Republic of Uruguay.

Reports of Societies.

ACUTE INTESTINAL OBSTRUCTION.

A CLINICAL MEETING of the Oxford and Reading Branch of the British Medical Association was held at Newbury on July 6th. Sir JOSEPH SKEVINGTON (Windsor) showed the head of a radius which he had removed with good result; slight lessening of pronation and of extension of the elbow followed. He also read an account of six cases of gastric ulcer operated upon; in one case seven ulcers were present, of which he removed the largest—perfect recovery followed.

Mr. J. L. JOYCE, in a paper on acute intestinal obstruction, said that the mortality of acute appendicitis after operation had been reduced during the last twenty years from 50 per cent. to as low as 2 per cent.; the mortality rate from acute intestinal obstruction, unfortunately, had not shown a corresponding reduction, and as late as 1915 had been quoted as 45.7 in a series of 276 cases coming to operation. Among fifteen cases on which he had recently operated, six, or 40 per cent., had died. Acute intestinal obstruction would always have a mortality, the further reduction of which by improvement of operative technique was doubtful; it was certain, however, that a very large reduction could be obtained by earlier diagnosis and earlier operation.

His six fatal cases came to operation on the average ninety-six hours after the onset of their symptoms; the corresponding average in the nine which recovered was forty-seven hours. The average interval in all the cases of the series between onset of illness and operation was much too long (seventy-three hours).

The speaker believed that only about 50 per cent. of cases of acute intestinal obstruction were characterized by the sudden agonizing pain, shock, and vomiting described dogmatically in the textbooks. Such cases were usually diagnosed at once and operated on early. In about half the cases the pain, though sudden in onset, was not very severe, and had remissions; vomiting might be infrequent at first, and shock might at that stage be entirely absent. To wait for faecal vomiting was to court disaster; too often the patient's life was sacrificed because he did not seem ill, his temperature and pulse were normal, his pain was better, and vomiting for the time had ceased. Physical signs in early cases were often absent. Until a definite diagnosis had been made or operation decided on, morphine should never on any account be given.

Organized Treatment of Crippled Children.

Mr. G. R. GIRDLESTONE read a paper on the organization of the treatment of crippled children, in which he said the main types concerned were surgical tuberculosis; paralyses, especially infantile paralysis; deformity, congenital or acquired; and, lastly, various injuries or diseases of bones, joints, nerves, or muscles. The aim was (1) to provide special hospitals for treatment; (2) to organize after-care for cases discharged from hospital; (3) to ensure that by provision of effective treatment at the earliest possible moment the children might be prevented from becoming cripples at all. In conjunction with treatment it was essential to provide general education and instruction in handicrafts. Both in the case of tuberculous joints and infantile paralysis much more could be done by early preventive treatment than by later corrective measures. Mr. Girdlestone described the organization of hospital schools, such as that at Baschurch, and said that in addition to hospital schools for each territorial area, the establishment of a number of clinics throughout the area was required, chiefly for the purpose of after-care. It was important to secure the co-operation of general practitioners with the staff of the hospitals. Surgical tuberculosis required the same lines of treatment, the same type of hospital, and the same organization of after-care as the other varieties of crippled conditions; if it were not grouped together with them, a duplication of every part of the organization would be required.

Mr. VICTOR BONNEY gave an instructive address on "Modern methods in the treatment of difficult labour," in which he said that midwifery would only be improved when in its teaching due emphasis was given to the surgical nature of labour. The speaker discussed the

causation of puerperal sepsis, and expressed the opinion that in the interest of the mother resort should more often be made to Caesarean section in certain cases of difficult labour.

Reviews.

ANIMAL EXPERIMENTS AND SURGERY.

MR. WALTER G. SPENCER'S three Hunterian lectures, February, 1920, have been published by the University of London Press.[1] They are full of good reading: "pure crude fact, secreted from man's life"; veritable and verified history, freed from the alloy of theory. It was a happy thought to give to surgeons these chapters of the history of surgical practice. So long as the Royal College of Surgeons has the dead weight of the Hunterian oration, the deposit of more than a hundred funeral sermons, for which it is responsible, it will always be glad to hear about other famous men who were not John Hunter. If only the Hunterian orators might be allowed to praise and commemorate a different man each year—Paré, Larrey, Bell, Astley Cooper, Simpson, Billroth, Paget, Lister, Horsley, and so forth—what a pleasant change it would be for all of us!

The subjects of Mr. Spencer's three lectures are: (1) An account, in historical sequence, of some of the experiments which have had a principal influence upon the development of surgery. (2) Experiments which have led to the application of surgery to the organs and organized structures of the deeper parts of the body. (3) Improvements in surgery.

Perhaps the first and second lectures, which cover a vast extent of ground, are better reading than the third, which links up surgery and bacteriology; but all three are good. The accounts of Galen's work and of the rush of the new learning in the Italian Renaissance, and of the physiological and pathological experiments published in the early *Transactions* of the Royal Society, are especially good. It is strange how Galen stands out, immeasurably ahead of his time, in everlasting isolation; he always has that effect; you find that nobody catches him up till you are at Vesalius. Another figure that stands out is that of Sir Astley Cooper, whose list of subjects in 1836 for his triennial prize at Guy's Hospital is a fine prophecy of the work waiting to be done.

Mr. Spencer scores two good points which must be noted here. He reminds us that these experiments have not only improved surgery; they have also improved medical treatment, and thus "have rendered unnecessary much of what was indifferent surgical treatment." And he criticizes very properly that clause of the Act of 1876 which forbids the performance of an experiment on an animal for the purpose of attaining manual skill. "At any rate, as far as I personally am concerned, the manual skill I gained whilst pursuing experiments on animals has been to me most valuable." He gives unhappy instances known to him of human lives endangered or lost for want of that manual skill which could have been acquired by experiment on animals under profound anaesthesia. It is a far cry from him to an introductory address by Sir James Paget in 1846 at St. Bartholomew's on the responsibilities of practice:

> All is permitted to depend upon the skill of one. Conceive that one yourself: what would be your remorse if, when in their confusion and distress they look to you, you feel helpless as themselves, utterly unworthy of the confidence with which they still lean on you; your hand paralysed by the fear of ignorance, your mind confused in that half-knowledge, whose glimmerings only show that more skill might save the dying man. . . .

Certainly, the young surgeon's first tracheotomy, his first ligature of a large artery in continuity, his first iridectomy, would be better done if he had already done them on animals. It would not give a moment's pain to the animals; and this clause of the Act of 1876 ought to have been relaxed or set aside long ago.

In his third lecture Mr. Spencer makes a brave attempt to cover all the ground that has been gained for surgery in the past fifty years. It is too much for him; the lecture is hardly more than a series of notes for subsequent lectures; we hope that he will give them. He has made us want more. Let him begin again, with Pasteur, and let him describe the working out of Pasteur's discoveries up to the years of the war and in the war. We are too ready to separate, in talk, medicine and surgery. It is a mere professional distinction, a matter of qualifications and appointments and lines of practice. The facts of disease refuse to admit or to recognize this distinction; our familiar talk of "medical cases" and "surgical cases" is rather childish; and some of us, perhaps, are hindered by it from finding the way to "see things steadily, and see them whole."

[1] *Animal Experiments and Surgery.* Hunterian lectures delivered at the Royal College of Surgeons of England on February 13th, 16th, and 18th, 1920. By Walter G. Spencer, M.S., F.R.C.S. London: University of London Press, Ltd. 1920. (Cr. 8vo, pp. 185. 6s. net.)

OTOLOGY.

IT is unfortunate that the fifth edition of such an important work as Dr. DENCH'S textbook of *Diseases of the Ear*[2] should have been published without bringing it thoroughly up to date. The portions which have been adequately revised or added afresh, such as the section which deals with the labyrinth, are excellent, but it might reasonably have been hoped that so distinguished an otologist would have presented more fully in a book of this size the results and conclusions of many years' experience. He states frankly in the preface, however, that the main body of the text has not been altered. In the preface to the first edition Dr. Dench wrote as follows: "In advocating operative procedures upon the middle ear and in devoting much space to the subject of middle-ear operations I am aware that I shall not have the support of many distinguished colleagues." Indeed, a large section of the book is devoted to intratympanic operations, which, however, are now seldom performed, though it must be assumed that Dr. Dench himself still practises them. For purposes of reference this is perhaps the most complete account of the subject to be found in a textbook, and the author clearly writes from personal experience. On the other hand, considerably more space is devoted to the manipulations required to remove the incus during the operation of ossiculectomy than is given to the entire treatment of cerebellar abscess, and it must be confessed that a lack of proportion is shown in apportioning space to each subject in accordance with its importance. Functional examination of the ear is well and fully described, and the importance of the subject, which is apt to be neglected, is insisted on, for it forms the basis of accurate diagnosis in many cases.

The section dealing with otosclerosis is obsolete and arouses feelings of regret that the author has not been able to rewrite those parts of the book which deal with conditions upon which modern pathological methods have thrown so much light; by failing to do so the writer has done an injustice to himself and to his book.

It is interesting to note that the author has never reopened the post-aural wound after a radical mastoid operation in order to line the cavity with Thiersch grafts; he advocates primary skin grafting at the time of the operation. The technique of grafting is fairly described, but the desirability of bringing the end of the graft out through the posterior part of the meatus is not mentioned.

The book is described as a textbook for practitioners and students of medicine. Should an already overburdened student have the courage and endurance to attack so large a volume on a special subject he might acquire a headache, but the work deals well with the more medical aspect of otology and with its relations to general medicine, so that it should be useful to the practitioner or the physician. Finally, the book, although by no means up to date, contains a vast amount that is of permanent worth and a wealth of detail that it would be hard to find elsewhere, so that it should form a valuable book of reference for the otologist.

[2] *Diseases of the Ear. A Textbook for Practitioners and Students of Medicine.* By Edward Bradford Dench, Ph.B., M.D., F.A.C.S. Fifth edition, revised and enlarged. New York and London: D. Appleton and Company. 1919. (Med. 8vo, pp. xxvi + 740; 172 figures; 15 plates. 30s. net.)

COLLOIDS IN BIOLOGY AND MEDICINE.

THE elucidation of problems in physiology and biology by the application thereto of physico-chemical laws has made great progress in the present century. It is illustrated on every page of Professor Bayliss's important *Principles of*

General Physiology. The study of colloid chemistry has advanced no less successfully during the same period, and the student now has half a dozen good handbooks in which he may learn about a subject that at the end of last century had barely grown out of original papers buried in scientific periodicals. It is true that colloid chemistry thus blossomed into books mainly for the reason that the technical chemist and practical manufacturer found that there was money in its study and applications. But the physiologist and biologist have profited greatly by the increased knowledge of the physics and chemistry thus gained and generalized; and Professor BULLOWA'S translation of the second edition of Professor BECHHOLD'S book, *Colloids in Biology and Medicine*,[3] provides the scientific reader with an excellent summary of the applications of colloid chemistry to the phenomena of these sciences.

The book is divided into four parts. The first is a general introduction to the study of colloids; the second details the physical chemistry of the carbohydrates, proteins, and fats under the comprehensive title "Biocolloids," with special chapters on enzymes and immunity reactions. The organism as a colloid system is discussed in the third part; the fourth part has a long chapter on the applications of colloid chemistry to toxicology and pharmacology. The translator has done his work well, and has added notes correcting or extending the original where necessary.

Professor Bechhold gives his readers an account of colloid chemistry that is fairly full, intelligible, and well documented so far as the German literature goes. He is not always successful in emphasizing the continuity of nature in physical chemistry. Nature, as is well known, *nihil per saltum facit;* Professor Bechhold is too much for arbitrary divisions and hard and sharp lines when writing of crystalloids, colloids, sols, and gels. It is not always made sufficiently clear to the reader that all these things pass one into the other in a series of unbroken continuity. In the chapter dealing with foods and condiments the difficulty of making palatable bread from potatoes is noted; the potato lacks gluten, and gluten is essential in bread making, because it is needed to form the framework of the loaf and to contain in its pores the starch grains shattered in the rising of the dough. During the war, we are told, an attempt was made to remedy this lack of gluten by adding to the dough blood or casein dissolved in ammonium carbonate.

TUBERCULOSIS AND PUBLIC HEALTH.

Tuberculosis and Public Health,[4] by Dr. HYSLOP THOMSON, is a first-rate handbook for medical men and intelligent laymen who wish to have a clear statement of the aims and rationale of antituberculosis schemes put clearly before them. The early chapters deal with tuberculosis and the health-index of communities, the types of disease and the causes of tuberculosis, and its connexion with housing and with milk. The methods of preventing its spread are indicated, and the importance of early diagnosis in tuberculosis of the lungs is adequately emphasized. The last third of the volume details the current schemes of treatment and control, with due exhibition of the points wherein our modern methods fall short of the ideal; the last chapter points out the economic aspects of tuberculosis, and suggests improvements in the views that now guide administrators who have the matter under their control.

The author is particularly well qualified to write on the questions with which this volume deals, and has had no little experience in the treatment of tuberculosis and in its management from the point of view of public health. He writes clearly and concisely, and takes broad views. The book may be cordially recommended to the attention of those interested or influential in all branches of the public control of tuberculosis, as a sound guide in the matters upon which they must come to decisions.

[3] *Colloids in Biology and Medicine.* By Professor H. Bechhold, Member of the Royal Institute for Experimental Therapeutics in Frankfort a.M. Authorized translation from the second German edition, with notes and emendations, by Jesse G. M. Bullowa, A.B., M.D., Assistant Clinical Professor of Medicine, Fordham University, etc. New York: D. Van Nostrand Company. 1919. (Med. 8vo, pp. xiv + 464; 54 figures. 31s. 6d. net.)

[4] *Tuberculosis and Public Health.* By H. Hyslop Thomson, M.D., D.P.H. London: Longmans, Green and Co. 1920. (Cr. 8vo, pp. xi + 104. 5s. net.)

NOTES ON BOOKS.

UNDER the title, *The Diary of a Police Surgeon*,[5] Dr. GRAHAM GRANT has collected some twenty-eight short stories of real life in the East End of London in which he has taken part. Many of the cases have attained celebrity in the Central Criminal Court; others were merely of local or transitory interest. But whether gruesome or comic, humorous or pathetic, the stories are all rendered attractive by the author's sympathetic handling, by the lightness of his touch, and by the raciness of his style. To us "The Vendetta" seemed one of the most entertaining, wherein an Italian, wanted in this country for murder, was arrested on landing in Italy on the charge of smuggling tobacco, and sentenced to fifteen years' penal servitude. And when Mrs. Grant went to condole with the fat, coarse, newly made widow, vendor of fruit, whose flirtations in her youth had led to the vendetta, she was met with the remark, "Italian women expect these things. I have a very nice pineapple to sell!" We sympathize with Dr. Grant's disappointment when, anxious to take part in a really good fight, he rushed to the assistance of a policeman in the clutches of a burly ruffian. The assailant, instead of meeting the new attack, merely remarked: "Blimey, it's the doctor," and suffered himself to be led away. There are amusing anecdotes about policemen, such as "Scotty," the twenty-stone policeman, who could run faster than most small boys. Scotty possessed not only a large body and a large heart, but also a large thirst, which led to his undoing; in celebrating his promotion as sergeant he was caught coming out of a public-house at 5 a.m.! Dr. Grant makes many interesting and acute observations on such matters as tests for drunkenness, note-taking when called to cases of supposed murder, and so on. And he is not above describing with gusto instances in which he has been caught napping in diagnosis. He is very proud of his Scottish descent and stubborn pertinacity. Dr. Grant's account of the famous Sidney Street siege perhaps hardly conveys the intensity of the excitement aroused at the time; and he does not even mention the presence at the siege of the Home Secretary of the day, Mr. Winston Churchill. To all readers of short stories we commend this little book, particularly if the reader be a doctor. If he is a layman, we must warn him to be prepared for gruesome details of murder wounds. But the human interest, and the presentation of life as it is in the remote East of London, are irresistible.

The fact that RAKHALDAS GHOSH'S *Treatise on Materia Medica and Therapeutics*[6] has reached an eighth edition evidences the value and popularity of this very able and remarkable compendium of the scientific and technical aspects of medicinal substances and their actions and uses. This edition is practically a reprint of the sixth edition of 1915, revised by the same editors, which was adapted to the *British Pharmacopoeia* of 1914. In it a fresh and more scientific arrangement of the subject matter of the book was made and new chapters on vaccine and serum therapeutics and organo-therapy were added. These alterations and additions have been maintained, and efforts have been made to bring this edition up to date. Seventeen years have elapsed since this book was first published, and, although medical science and treatment have undergone great—almost revolutionary—changes during these years, it has been found possible to preserve the original system of exposition which gives the volume its value as a work of reference probably unsurpassed for its size and cost in this or any other language. It will be found most helpful both by students and practitioners, and its systematic arrangement and an excellent index render its contents, as we have repeatedly found, easy of access.

[5] *The Diary of a Police Surgeon.* By Graham Grant, V.D., Lieutenant-Colonel R.A.M.C.T., L.R.C.P. and S.Edin., Barrister-at-Law, etc. London: C. Arthur Pearson, Limited, Henrietta Street, W.C. 1920. (3s. 6d.)

[6] *A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By the late Rakhaldas Ghosh. Eighth edition, by Lieut.-Colonel B. H. Deare, I.M.S., and Birendra Nath Ghosh. Calcutta: Hilton and Co. 1920. (Cr. 8vo, pp. 709. Rs. 9 net.)

A SECOND edition of the *Index Generalis* of universities, university colleges, libraries, scientific institutes, museums, observatories, learned societies, etc., is being prepared. Particulars are accepted from all nationalities, and should be addressed to Professor R. de Montessus de Ballore, 56, Rue de Vaugirard, Paris (VI[e]).

THE seventh edition of Hutchison and Rainy's *Clinical Methods* and the fifth edition of Comyns Berkeley's *Handbook of Midwifery*, will shortly be published by Cassell and Co.

APPLIANCES AND PREPARATIONS.

A Concave Burr.

MR. T. JEFFERSON FAULDER (London, W.) writes: Those who use round-headed burrs for making and enlarging openings into the antrum of Highmore find some difficulty in keeping the burr in action on the broken edge of bone.

This difficulty is obviated by using an instrument shaped as in the illustration, in which the serrations are in a concavity instead of on a convexity. Once in place the burr has no tendency to slip off the edge of bone. In a great many cases the instrument can be used perfectly straight, like a Lichtwitz trocar. It is then most effective and rapid, there being little or no eccentric action. Where necessary—for example, in presence of deviated septum—it can be used slightly curved towards the burr. The makers are Messrs. Mayer and Phelps.

An Obstetrical Belt.

Dr. BETHEL SOLOMONS (Gynaecologist to Mercer's Hospital, Dublin) writes: I have always experienced great difficulty in obtaining for my patients an obstetrical belt which was comfortable and economical. Having tried many varieties, I asked Messrs. Fannin of Dublin to make the one which is illustrated here. It consists of two pieces of elastic (silk or cotton). The upper and longer piece, exclusive of straps, is 38 in. in length by 6 in. in breadth, and is fastened at the back with buckles. It may be worn alone during the sixth month. In the seventh month the lower and shorter piece, which is 18 in. in length by 6 in. in breadth, is attached to the other by safety pins, as illustrated. Its position is adjusted to the growth of the fetus—for example, at the end of the seventh month its place would be very little inferior to the longer piece, while at term it would be as in the figure. It will be found useful in antenatal clinics, as the cost is small.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on July 13th nineteen cases were considered and £202 5s. voted to the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 60, of M.R.C.S Eng. who died in 1869. Applicant's only income is £28 a year from investments. She acts as general help in a home in return for food and fire. She suffers from chronic ill health, and has had several operations. Her invalid sister lives with her, and she is quite incapable. Voted £10 in two instalments.

Widow, aged 64, of M.D. who died in 1889. Applicant's only income is £54 16s. from another charity. She lives alone, and friends pay the rent. Cannot manage owing to the high cost of living. Voted £5.

Daughter, aged 50, of M.D Dub who died in 1882. Suffers from ill health and is unable to work. She receives £50 from friends and £7 10s. from investments. Shares home with a friend and pays part rent. Asks for further help owing to the high cost of living. Relieved five times, £22. Voted £5.

Daughter, aged 70, of M.R.C.S.Eng. who died in 1878. Applicant is a trained nurse, but cannot earn much now on account of her advanced age. She has no other income but what she earns, and lives with her sister, who has to keep her. Relieved twice, £30. Voted £18 in twelve instalments.

Widow, aged 71, of M.D.Glasg. who died in 1876. Her only income is £20 from another charity. She lives with her married daughter, who can scarcely afford to keep her. She is crippled with rheumatism. Relieved six times, £78. Voted £18 in twelve instalments.

Widow, aged 59, of F.R.C.S.Edin. who died in February, 1919. Applicant's husband had received help from the Fund. On the death of her husband she took a post as temporary clerk at £2 a week, but has now had to give this up, and asks for help until she obtains another post. No other income. Rent 8s. a week. Relieved once, £5. Voted £5.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

THE INFLUENZA EPIDEMIC OF 1918-19.

MORTALITY STATISTICS.

As a supplement to the eighty-first annual report of the Registrar-General a report has been issued on the mortality from influenza in England and Wales during the epidemic of 1918-19. The deaths allocated to influenza during 1918 numbered 112,329—53,883 males and 58,446 females. After deducting 7,591 deaths among non-civilian males, the 104,738 civilian deaths correspond to 3,129 per million civilian population, an epidemic mortality not hitherto approached in this country since registration commenced, the cholera epidemic of 1849 (with 3,033 deaths per million population) alone being excepted. During the forty-six weeks, June 23rd, 1918, to May 10th, 1919, the total deaths allocated to influenza were 151,446, including 140,989 civilians, and the corresponding civilian death rate was 4,774 per million per annum. It is well known that during influenza epidemics the mortality attributed to pneumonia, bronchitis, heart disease, and phthisis is increased, and that other deaths than those allocated to influenza are in reality due to that cause. These additional deaths, due to the epidemic but not certified as following influenza, are estimated in the report. In the case of females three modes of estimation giving tolerably concordant results are employed. First, the excess for 1918, quarter by quarter, of mortality from pneumonia, bronchitis, heart disease, and phthisis over the corresponding mortality for 1913-17, is added to the excess of deaths ascribed to influenza. Secondly, the excess of the recorded total mortality for 1918 over the non-epidemic mortality, estimated according to the ratio of deaths from other causes in 1918 to the average of other years, is taken as an index of the number of deaths attributable to the epidemic. Thirdly, a method is tried depending on "the unwarranted assumption that, in the absence of the epidemic, mortality would have been as favourable during the third as during the first and second quarters." For male deaths, the estimation, which was made conservatively, offered additional difficulties; population figures were only available for civilians, and the character of the civilian population had been profoundly changed by enlistment during 1913-17. The figures for the estimated deaths caused by the epidemic from July to December, 1918, are: 59,000 civilian males and 73,000 females—132,000 in all. The total loss of life due to the epidemic in England and Wales during 1918 appears to have been rather over than under 140,000; of these deaths, 112,329 were certified, and the remainder are estimated, to be due to influenza. In the estimation of the deaths due to the epidemic in 1919, May 10th has been chosen as marking the termination of the epidemic. The estimated civilian deaths from January 1st to May 10th, 1919, were: Civilian males, 24,750; females, 26,750. The round figure of 200,000 represents the total deaths in England and Wales attributable to the epidemic in 1918 and 1919.

Age Distribution.

The type of age distribution which had consistently characterized influenza mortality for many years changed suddenly and completely with the onset of the summer epidemic of 1918, and the new type of age distribution continued to characterize the succeeding waves of the epidemic. For comparison of the age distribution of influenza mortality the statistics for females only have been used; allocated but not estimated deaths have been taken into account and the mortality incidence has been standardized. Deaths at ages 0-15, and especially at 15-35, which had formed since 1889 a fairly uniform proportion of the whole number, with a tendency of late years to decrease in relative importance, suddenly increased from 7 to 11 per cent. at 0-15 to 25 per cent., and from 8 to 10 per cent. at 15-35 to 45 per cent. In middle age (35-55) the proportion was comparatively little affected, but showed some increase over the years immediately preceding. Ages of 55-75 and over 75 had for many years provided 60 to 70 per cent. of registered deaths; in the epidemic of 1918 the proportions fell to 10 per cent. (55-75) and 2 per cent. (75 and upwards).

"It may be doubted whether so sudden and so complete a change of age incidence can be paralleled in the history of any other disease, yet all the weight of medical testimony goes to show that the influenza of 1918 was essentially the same as that of former years."

The extent of this alteration—which was not confined to belligerent countries—may be gauged from comparison of the mortality for females in the fourth quarter of 1918 with their average mortality during the fourth quarters of 1914–17; at ages 25–30 the mortality was 540 times as great in 1918, but with advancing age this excess fell, until at 55–60 the proportion was approximately 23 to 1, and at 85 and upwards only about 2 to 1.

The report contains graphs of the age distribution of deaths of females from influenza in each quarter of 1918 and the first quarter of 1919. These show very clearly the two types of age incidence—that prevalent before the 1918 epidemic, with the peak of maximum mortality incidence at ages 70–75, and the new type, characteristically seen in the third and fourth quarters of 1918 with the peak at ages 25–30. It is interesting to note that the curve for the second quarter of 1918 presents the peaks characteristic of both types; the suggestion that this curve is compounded of the old and the new types is supported by examination of the age incidence of influenza mortality during the first and second halves of this quarter; the former mortality conforms to the old, the latter to the new type. It is noteworthy also that the commencement of each of the two later waves of the epidemic was marked by a change in age distribution of mortality similar in nature to (though less extensive than) that noted at the inception of the epidemic; it is possible, therefore, that an abrupt change from decreasing to increasing youthfulness of fatal cases, appearing at a time when the number of deaths occurring gives no sign of an immediate recurrence, may serve as an indication that another wave of mortality is to be expected.

Local Distribution of the Epidemic.

Throughout the epidemic the mortality rates for all classes of area were much the same, but the towns suffered first, and, during the first wave, suffered considerably more than the rural areas. At this time, too, the north and Staffordshire furnished the highest mortality. The third wave also affected the north to a preponderant extent, but during the second wave deaths in the southern county boroughs caused the mortality in the south to be considerably higher than that prevailing elsewhere. Farr, in the report of 1847, noted that in the epidemic of that year the mortality was twice as high in the insalubrious parts of London as in those less unhealthy. The London mortality of the 1918–19 epidemic has been compared among the boroughs arranged both in order of healthiness as measured by the standardized death rate and in order of wealthiness as indicated by the proportion of indoor domestic servants to population. No correlation of mortality with wealth or with health was demonstrable. Farr also observed that in 1847 "influenza attacked persons labouring under other zymotic diseases." In the epidemic of 1918–19 there was no increase either in notifications of or mortality from infectious disease.

Secondary Causes of Death.

The report contains tables and lists giving very full particulars of the way in which every influenza death was certified—a mass of detailed information which, as the report suggests, is less valuable on account of the interest at present attaching to it than for the information which it may convey to succeeding generations. Meningitis was certified most frequently in the first wave and least so in the second; except for males in the third wave, its maximum frequency was at ages 5–10 in all cases. In the first wave 6.7 per cent. of deaths of males and 8.1 per cent. of those of females were attributed to heart disease in conjunction with influenza; in the second wave 2.4 and 3.2 per cent. respectively; in the third 3.1 and 4.5. Deaths from bronchitis, bronchopneumonia, lobar pneumonia, and undefined pneumonia, associated in each case with influenza, numbered, per 1,000 total deaths, for males, 691, 830, and 790 in the three waves respectively, and for females 657, 813, and 758. It has been asserted that the mortality rate was specially high among pregnant or parturient women; the total number of such women recorded as dying from influenza is 2,285. It is calculated, however, that the death-rate in pregnant or parturient women, estimated according to the births recorded, was not more than 5.3 to 5.7 which but little exceeds the 4.9 calculated for the whole female population aged from 15–50. Moreover, it is shown that the distribution of epidemic mortality from puerperal causes is totally different from that of the mortality annually allotted to the same causes; the former was caused to the extent of 89 per cent. by abortion and other accidents of childbirth. The certification was such as might be expected if pregnancy did not materially affect the risk of death from influenza, but if fatal influenza led to abortion or premature delivery. The distribution of secondary causes of death, as recorded in various parts of the country, is very uniform and the minor differences exhibited in the three waves are shown in all areas; confirmation is thus obtained of the great similarity in type of the epidemic throughout England and Wales.

ROYAL SANITARY INSTITUTE CONGRESS.

THE thirty-first congress of the Royal Sanitary Institute took place at Birmingham from July 19th to 24th. In his inaugural address the President, Viscount Astor, Parliamentary Secretary to the Ministry of Health, dwelt mainly on the importance of individual effort in the healthy growth of new standards and new methods of public hygiene. The diseases of to-day, he said, had become less community diseases and more contact diseases; the efforts of public health workers must therefore be concentrated on creating in the individual the same sense of responsibility for personal health as existed in the community for communal service. The Ministry of Health was a co-ordination of departments; it was not and never should become a bureaucratic organization forcing upon an unwilling people hospitals and clinics, doctors and nurses.

Sanitary Workers and Preventive Medicine.

In his presidential address to this section Colonel Sir Robert Firth rejoiced that the view of preventive medicine which restricted its scope to environmental questions and the amenities of external sanitation no longer prevailed; the Ministry of Health, he thought, promised well for simplification and unification of public health questions. After reviewing the advances of preventive medicine during the last fifty years, he surveyed the chief regions in which preventive measures were still urgently necessary. An outstanding need at present was the dissemination of knowledge among the people. The ideal for future industrial expansion was that it should be rural; in the place of so-called "garden cities" it was preferable to have industrial villages, whence the factory worker could reach and be a real sharer in the true country; in his spare time he could be a producer from the soil instead of a consumer of cheap luxuries in the town. Meanwhile the towns should contract in place of expanding, and should rise instead of spreading. The driving force behind the Ministry of Health must and would be the medical profession. The problems of preventive medicine arose where the individual citizen lived; the general practitioner, who should be helped and provided with better facilities than he now had, should be the real fighting man of the cohorts of health. The proposals of the Consultative Council of the Ministry of Health formed a great advance, but the centre of gravity of a learned profession ought not to drift into a Government department. The student and the young graduate should be brought more closely into contact with the realities of epidemiology and preventive medicine. Intimately associated with any revision of the public health laws was the question of unity of the administration; the ideal conception was the division of the country into some twelve or fourteen large areas, each administered by a commissioner of health with plenary powers, responsible only to a central health authority in Whitehall, and with deputy commissioners as executives under him in the local areas.

Institutions for the Mentally Defective.

Dr. G. A. Auden, School Medical Officer, Birmingham, reviewed the more important present-day needs for provision of institutions for the mentally defective. For colony treatment two main conditions must be fulfilled: (1) They must command the complete confidence not only of the community as a whole, but in particular of the relatives of the persons committed to them; (2) they must show a financial return bearing some proportion to the outlay involved. There was at present a real danger that committees in pursuing immediate economy of outlay might lose sight of these essentials. Only 19 out of 221 certified institutions had accommodation for more than 100 inmates. Large institutions were necessary.

Industrial Hygiene.

Mr. Neville Chamberlain, M.P., presided over the Section of Industrial Hygiene. In an address on industrial efficiency and fatigue, Dr. Edgar L. Collis prophesied that the nineteenth century would be famous for its study of

the machine and the first half of the twentieth century for the study of mankind. From the standpoint of the industrial economist it was important that industrial work should reach the maximum quickly and maintain that maximum hour by hour, spell by spell, day by day, and week by week. The physician knew that fatigue, the result of well arranged work, was a healthy phenomenon necessary to the rhythm of activity and rest. Fatigue should not, however, be sufficient to accumulate or carry over from one period to the next. By the term "ill health" was meant not definite sickness or illness, nor anything which kept the person from work, but that condition in which the liability to succumb to infection or to sustain an accident was increased, and which if long continued would permanently damage some part or organ of the body. The object, therefore, of both the economist and the physician was to obtain a maximum of activity with no accumulation of fatigue. Steps could be taken to increase efficiency and keep fatigue within the limits of health by (1) scientific selection of workers; (2) attention to personal hygiene, ventilation and lighting, and food supply; (3) adapting the form and dimensions of machinery to the requirements of the different workers; (4) devoting attention to the relation of work and rest to the total hours' work per week, and the arrangement of these hours day by day to the length of spells of work and to the use of organized rest pauses.

Maternity and Child Welfare.

The presidential address in this section was delivered by Lieut.-Colonel F. E. Fremantle, M.P., who said that the chief work of future years was to eliminate the ten deaths per thousand births from diarrhoeal disease, and to cut down the remaining eighty-seven to the forty that might be considered inevitable. The supply of midwives was an urgent practical problem; the Midwives Acts, while improving the training and practice of midwives, had made it difficult and costly for women to enter that profession, and the economic changes resulting from the war had hampered the activities of many nursing associations. Dr. W. H. Pooler, Medical Officer for Infant Welfare, Derbyshire County Council, in a paper on infant welfare work in rural areas, said that the health visitors in these areas should have their present districts considerably cut down; in the appointment of visitors combining several functions, fitness for infant welfare work should have the first consideration. The health visitor's personality was almost more important than her training. The provision of material benefits such as the distribution of milk and sugar at welfare centres was detrimental to the work. With regard to medical control, a rota of medical officers was not desirable, but it was wise to employ as far as possible general practitioners who had had post-graduate or other special training.

Housing.

The presidential address to the Conference of Medical Officers of Health was delivered by Dr. John Robertson, Medical Officer of Health, Birmingham, who said that the provision of medical and allied services as recently discussed by the Consultative Council was less important at the moment than the housing question. As one who was getting old in the public health medical service he was more than ever convinced that to improve the health and morality of the people the great masses living in large towns must be given decent conditions of housing. The provision of new houses to make up the present shortage had been taken in hand on fairly good lines. The supply of satisfactory houses for rural labourers, although very difficult, was of the greatest importance; country doctors might do more to expose the evil conditions under which labourers had to live in some bad parts of rural England. In addition, the slum parts of the large towns must be reconstructed; among the slum dwellers there had been a great desire to get something better, and but for the war many fewer slum houses would be occupied. The question must be dealt with on larger lines than were contemplated in the present Housing Acts.

After-care of the Tuberculous.

Dr. H. Gordon Smith, Chief Tuberculosis Officer, Worcester County Council, said that the provision of suitable employment was the most important and at the same time the most difficult problem in connexion with after-care of the tuberculous. The provision of work among the general population was subject to the following difficulties: (1) Competitive labour was highly undesirable for genuine consumptives, whose health was in a state of unstable equilibrium; (2) commercially-minded employers were against employing partially fit men; philanthropic employers had been taxed practically out of existence; (3) many consumptives had an inherent disinclination to work; (4) trade unions caused much trouble; (5) the minimum wage had done much harm by upsetting the basic principle of supply and demand; (6) the present dearth of houses had made removals difficult. No scheme for colonies or settlements could be run on economic lines; it would be necessary for the Government to become the main employer of labour by the tuberculous, and to conduct colonies and settlements on communal lines, sending to the local authority a bill of perhaps half the cost for every consumptive (and his family) taken off its hands. Hopeful cases should go to a sanatorium. When the disease had become quiescent and was not infectious the patient could be drafted to a training colony. The permanently crippled should be advised to gain admission to a village settlement, where, after reasonable trial of rest to obtain quiescence, he should be encouraged to work as much as possible.

PRESENTATION TO DR. J. A. MACDONALD.

THE following further subscriptions have been received up to and including the first post on Tuesday, August 3rd, in response to the appeal published in the JOURNAL of July 24th (p. 129), towards the presentation to Dr. J. A. Macdonald on the occasion of his retirement from the office of Chairman of Council of the British Medical Association which he had held for ten years. Subscriptions of any amount not exceeding five guineas should be made payable to "The Macdonald Presentation," and sent to the Medical Secretary, British Medical Association, 429, Strand, London, W.C.2.

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Barrow, Colonel H. J. Waller, Weymouth ...	5	5	0
Bartlett, Dr. T. W., Steeple Bumpstead ...	1	1	0
Baskin, Captain J. L., R.A.M.C.(T.F.), Littlemore, Oxford	3	3	0
Bottomley, Dr. F. C., O.B.E., Bournemouth ...	1	1	0
Bramwell, Dr. Byrom, LL.D., Edinburgh ...	1	1	0
Branson, Dr. Clement W., Bournemouth	0	10	0
Brown, Dr. W. F., Ayr ...	1	1	0
Bunting, Dr. T. L., Newcastle-on-Tyne	1	1	0
Coulter, Mr. R. J., Newport, Mon.	2	2	0
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Drever, Dr. J. R., Edinburgh	1	1	0
Dickie, Mr. W., Middlesbrough	1	1	0
Dillon, Mr. Luke A., O.B.E., Seaham	1	1	0
Dobbie, Miss Mina L., London	1	1	0
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Fremantle, Lt.-Col. F. E., O.B.E., M.P., Hatfield ...	1	1	0
Gardner, Dr. Jas., Burnley	3	3	0
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Gloucestershire Local Medical and Panel Committee (per Dr. T. G. Miles, Ruardean) ...	5	5	0
Hall, Dr. J. Spenser, Frensham	0	10	6
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Howard, Dr. W., Norwich	1	1	0
Jones, Dr. Evan, Aberdare	1	1	0
Laing, Dr. G. D., Limpsfield	0	10	0
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Macdonald, Dr. Peter, York (second subscription)	3	3	0
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British Medical Journal.

SATURDAY, AUGUST 7TH, 1920.

THE PROPRIETARY MEDICINES BILL.

The Report of the Select Committee of the House of Commons on Patent and Proprietary Medicines was issued in August, 1914, when the nation was absorbed in the war and had no mind to study problems in domestic legislation, however urgent and important these might be. The Select Committee was appointed by the Treasury in May, 1912, and a full account of its findings and recommendations was published in this Journal on August 29th, 1914. The evidence placed before the Committee had been reported in our columns from time to time, including that given on behalf of the British Medical Association by the Medical Secretary and by other witnesses who had given the subject special attention.

The Select Committee found what the medical profession knew only too well—namely, that there was a large and increasing sale in this country of patent and proprietary remedies and appliances, and of medicated wines. It grouped these widely differing remedies into "(*a*) genuine scientific preparations; (*b*) unobjectionable remedies for simple ailments; and (*c*) many secret remedies making grossly exaggerated claims of efficacy; causing injury by leading sick persons to delay in securing medical treatment; containing in disguise large proportions of alcohol; sold for improper purposes; professing to cure diseases incurable by medication; or essentially and deliberately fraudulent." It found that the third class of nostrums were put upon the market by ignorant persons and often by cunning swindlers exploiting for their own profit the apparently invincible credulity of the public. This, said the Committee, constituted a grave and widespread public evil, and it summed up the legal position by declaring that the law as it stands "is chaotic and has proved inoperative, and that successful prosecution for fraud in the advertisement and sale of secret medicines is fraught with the greatest difficulty . . . that, consequently, the traffic in secret remedies, except as regards scheduled poisons and the grosser forms of impropriety, is practically uncontrolled in this country." The Committee then declared that new legislation, rather than mere amendment of the existing laws, was urgently needed to mend "this intolerable state of things." It asked for a special Department of State to deal with the matter and a special court or commission to sit in judgement on the claims made on behalf of every patent, secret, and proprietary remedy, the composition of which should be disclosed, not to the public, but to the Department. It further recommended that the public should be informed as to the proportion of alcohol in medicated wines, and that false or misleading therapeutic claims should be punished, while the advertisement of nostrums purporting to make what are regarded as impossible cures should be prohibited.

The report was a timely and informing document, and it is sad that six years should have passed before anything was done about it. Now at last a bill has been introduced into the House of Lords by Viscount Astor, Parliamentary Secretary to the Ministry of Health. The bill is "to regulate the manufacture and sale of certain medicines and surgical appliances, and for purposes connected therewith." Its short title is the Proprietary Medicines Bill, and its object is to give effect to the recommendations of the Select Committee. In the words of the Memorandum accompanying it, the bill contains no provisions which were not specifically recommended by the Select Committee, and it includes all their more important recommendations so far as they fall within the province of the Ministry of Health. Provision is made for the setting up of a register of proprietary medicines and appliances, and of the owners thereof, and the sale of any unregistered proprietary medicine or appliance is forbidden. The former term is defined to mean any medicine which is held out as of use for curative or remedial purposes, and which is either sold under a trade name or manufactured by a secret process. The sale is prohibited of remedies purporting to cure certain diseases named by the Select Committee and now set out in a schedule to the bill. These are cancer, consumption, lupus, deafness, fits, epilepsy, amenorrhoea and other diseases peculiar to women, diabetes, paralysis, locomotor ataxy, Bright's disease, rupture; and the Minister may add to this list. It is further made an offence to advertise any article in terms suggesting that it can be used to procure abortion. Any injurious medicine or appliance may be removed from the register by the Minister of Health, but the owner is given a right of appeal to the High Court.

Again, the bill, in accordance with the recommendations of the Select Committee, forbids certain objectionable practices, chiefly in connexion with advertisements. Thus it is an offence for any person to enclose with a proprietary medicine or surgical appliance any written matter (other than a trade catalogue) advertising or recommending the use of some other proprietary medical or surgical appliance. Owners, vendors, or agents of registered remedies may neither invite correspondence regarding ailments nor set up to treat sufferers by correspondence. It is also an offence to publish fictitious, false, or misleading testimonials, or to suggest that a proprietary article is recommended by a duly qualified medical practitioner, without giving his name, qualifications, and, if alive, his address; or to suggest, contrary to the fact, that a proprietary article was discovered, invented, or compounded by a medical practitioner. We may add here that if a duly qualified medical practitioner should allow such publication of his name and address in advertisements of articles of this nature, he would find reason to regret this form of publicity. Other provisions contained in the bill were indicated last week in our Parliamentary Notes, where the subject is referred to again this week in reporting the debate in the House of Lords.

Upon the bill now before Parliament two questions naturally arise. One is: Will it succeed in protecting the public against the vast and cruel frauds of the vendor of quack medicines and appliances? The other is: Will Parliament have the courage and public spirit to pass it into law, without amendments which would destroy its effectiveness? The bill certainly seems to embody a large part of the recommendations of the Select Committee. That Committee expressed the belief that departmental and legislative action as laid down in its report would not inflict injustice upon any patent or proprietary medicine or appliance; that it would, alike by its operative and deterrent effect, afford the public efficient and urgently needed protection against injury and fraud; and that no measures of a smaller scope would secure this result. In going as far as it did in its recommendations, the Select Committee performed a great

public service, and it went much further than many had anticipated. The bill may not abolish all the evils of this nefarious trade, but we think the medical profession will regard it as a substantial measure of reform, and one that should be supported. It strikes, of course, at vested interests, and is certain to be opposed, both in public and behind the scenes. The leading opponents will be the makers of secret remedies, who take millions of pounds each year out of the pockets of the public, and that section of the press which prints their advertisements. The Select Committee, in its report, said: "As so large a sum as £2,000,000 or more is spent annually in advertisements of these remedies in one form or another of advertising, the trade is naturally of great importance to newspaper proprietors."

The appointment of the Select Committee was largely due to the persistent efforts, continued over many years, of the British Medical Association and its JOURNAL in regard to patent medicines. The Representative Body in 1915 placed on record its satisfaction with the recommendations of the Select Committee, and instructed the Council, as soon as the time should be considered opportune, to take all necessary steps in pressing for legislation on the lines of the report. In so far, therefore, as the Proprietary Medicines Bill carries into effect these recommendations, it will be the duty and the privilege of the British Medical Association to support by every means its passage into law, and to oppose any attempt to water it down.

CULTURE AND THE PRACTICE OF MEDICINE.

SYMBOLICAL relationships are all too rare in the world of science: the atmosphere is not encouraging. Nevertheless on occasion they flower with a strength sufficient to attract—perhaps by reason of their uncommon nature—something more than passing notice. It is generally agreed that the recent meeting of the British Medical Association at Cambridge constituted one of these occasions, and revealed again the essential inseparability of the practice of medicine and the cultivation of the arts.

It is certain that true progress in medicine can only come through the continuous application of the scientific method; but when this method is carried to the patient, if it is to be thoroughly effectual, it must be tempered by a spirit which science alone cannot give. Such a spirit embraces a love of humanity, a wise toleration of ignorance, a broad understanding of the lives of divers persons, a controlling influence which curbs or stimulates according to need. The list could be enlarged until it included all the qualities which best fit a man for a life of service to his fellows. Great care is needed here or the service will be given consciously with a consequent fall in value. In approaching every case the consciousness should be fully occupied by the scientific method, the rest being at least subconscious. Unless this relation is preserved the patient is deprived of the full fruits of scientific resources, for the conscious mind will have enough to do in grappling with this aspect. But in the background there must always be the modifying hand of cultural influence.

It might be possible to broaden the medical curriculum to include the acquisition of knowledge of a more general kind; but would such a step be advisable? Knowledge so acquired would become part of the armamentarium, and as such would lack the grace which should be its peculiar characteristic. In order to work at its best and in its right place general culture ought to be a matter of individual and private concern. The most that can be done is to place the individual in the environment where opportunities for broadening the mind frequently present themselves in the guise of recreations rather than exercises.

The older universities provide these opportunities in greater measure than their younger sisters by virtue of the tradition they enshrine, the variety and diversity of their schools, and the preservation of the college system, which tends to prevent undesirable segregation of the faculties, and promotes free intercourse between them. This spirit finds recognition everywhere else in the formation of students' clubs open to all faculties, where the common room is a common meeting ground. It is here that non-residents can lay the foundation of a broader culture than they will acquire from a faithful adherence to the official syllabus.

It may be urged that this is very well in student days, but impossible for a man in busy practice to continue. Such objections usually come from those whose cultural interests are in inverse proportion to their banking accounts, and cannot, therefore, be taken seriously. But when a man opines that the Arts have been crowded out of his life, he needs to be told that he is depriving his mind of precious moments of relaxation, and that his work must inevitably suffer in point of efficiency, and in time of performance. A fatigued and overheated mind may, if it will, dip in the cool waters of its choice and emerge refreshed and renewed, with a better zest, a steadier balance, and a keener sense of proportionate values.

In the end culture carries its own armour and needs no defence. It is not aggressive, never making the first attack; but it moves on inevitably by a process of quiet permeation. Wherever it is found there also are the springs of action—a belief in to-day and a hope for to-morrow.

LABORATORY DIAGNOSIS OF ACUTE INTESTINAL INFECTIONS.

THE exact diagnosis of infections of the typhoid group, of dysentery, cholera, and other specific forms of enteritis, rests largely on observations carried out in the laboratory, and the number and variety of the methods that may be employed is considerable. In the usual course of events a rough process of weeding out is going on with regard to such methods, their fate being determined chiefly by the degree of their clinical accuracy and usefulness. Under ordinary circumstances this process of natural selection is somewhat slow, but the war provided considerable experience of intestinal infections, and the Medical Research Council has rendered valuable service by the issue of a report by its Committee on pathological methods,[1] the object of which is to examine different methods of procedure, and to state their opinion as to which are the best adopted for ordinary laboratory use. The Committee consisted of Sir F. W. Andrewes (chairman), Professors J. G. Adami, W. Bulloch, and Captain S. R. Douglas (secretary), with the following additional members co-opted for portions of the present report: Professors G. Dreyer and C. H. Browning, Drs. J. C. G. Ledingham, C. G. L. Wolf, and Mr. Clifford Dobell. In view of the standing, contributions, and authority of these gentlemen, the report will be read by laboratory workers in this country with interest and appreciation. We should like

[1] Medical Research Council. Special Report Series, No. 51. The Laboratory Diagnosis of Acute Intestinal Infections, including the Principles and Practice of the Agglutination Test. H.M. Stationery Office. 1920. Price 4s. 6d. net.

to have seen the name of Dr. Dudgeon in this list of co-opted members, and also a representative of the pathologists who worked in Egypt, Gallipoli, or Malta; with perhaps a representative of the Navy. In a matter of this kind practical experience is of inestimable value; for, as we have pointed out, that is the final court of jurisdiction in such questions as are here under consideration. The ultimate object which the Committee appears to have in mind is the standardization of laboratory methods, and with that end in view they recommend certain procedures in preference to others, stating their reasons. Simplicity, accuracy, and reliability are the requirements that have guided them chiefly in their task of selection, and regarding the report as a whole it will be admitted that they have discharged this task with much care and tact, and with as much success as the present state of knowledge permits. In Part I, after a brief description of the bacterial flora of the normal intestine, the collection of material for diagnosis is considered. Methods for the isolation of various pathogenic bacilli are then described in detail, differential media and enrichment processes being dealt with at length. The section on amoebic dysentery is particularly concise and valuable. The infections dealt with include not only the enteric group and bacillary dysentery, but acute food poisoning, enteritis due to Morgan's bacillus and *B. pyocyaneus*, and the diagnosis of cholera. This portion of the report is extraordinarily valuable and complete: we know of no textbook that comes near it. Part II is devoted to the principles and practice of the agglutination test, with special reference to the various groups of bacilli concerned in intestinal infections, and it is a model of clear and candid exposition. The technique of agglutination is described in detail, and the somewhat elaborate development of the absorption test as practised by Sir Frederick Andrewes is here set forth. Finally, the merits of Dreyer's technique in carrying out the agglutination test have completely captured the Committee, who are careful to describe the details of that procedure in full, ending up with a history of it by Dr. A. D. Gardner. This report is valuable as a landmark in the progress of laboratory knowledge in its application to the diagnosis of the particular infections dealt with. At the same time we would remind our readers and the readers of this report that bacteriology in its application to medicine is still in a comparatively early stage, and that the views of to-day may not be those of to-morrow. Valuable as the present report is it deals solely with diagnosis. We could wish that an equally authoritative attempt were to be made with regard to the prevention and specific treatment of the important diseases here under consideration.

GUYON.

The announcement of the death of Jean Casmir Félix Guyon, who was born as long ago as July 21st, 1831, in the island of Réunion, recalls to men in the "fifties" a most popular teacher of genito-urinary surgery at the Necker Hospital in Paris. Guyon was appointed interne to the Paris hospitals in 1854, prosector in 1858, and his thesis for the doctorate, on fibroid tumours of the uterus, is dated 1860. He became surgeon to the hospitals in 1862, professeur agrégé the next year, and professor in 1877, being succeeded in this chair of genito-urinary surgery in 1896 by his brilliant but comparatively short-lived pupil, J. Albarran (1860–1912). His clinical teaching at the Necker Hospital has been permanently preserved in his two chief works, *Leçons cliniques sur les maladies des voies urinaires, professées à l'hôpital Necker* (1881), which passed into a second edition of 1,084 pages in 1885, and a third edition, in two volumes, in 1894–6, and *Leçons sur les affections chirurgicales de la vessie et de la prostate*, collected and edited by his former resident, F. P. Guiard. Both these works were translated into German and Russian. He was the author of *Éléments de chirurgie clinique*, a volume of 672 pages, and of numerous articles in *Annales des maladies des organes génito-urinaires*, which he founded and for years edited in conjunction with Lancereaux. On August 3rd, 1900—almost exactly twenty years ago—his friends and pupils presented Professor Guyon with a medal executed by M. Bottée and representing his half profile. Professor Guyon was a Commander of the Legion of Honour, and a member of the Institute and of the Academy of Medicine.

THE SANATORIUM TREATMENT OF TUBERCULOSIS.

In 1919 the Medical Research Committee issued a report (Special Report Series, No. 33) which demonstrated that the mortality experience of patients discharged from the Midhurst Sanatorium was very unfavourable in comparison with that of equivalent samples of the general population. As remarked in the preface to the report, this finding does not lead to the conclusion that sanatorium treatment is valueless. Of course, the comparison should be between the after-histories of sanatorium patients and of persons of the same class and at the same stage of the disease not treated in sanatoriums. Perhaps the improved records to be kept by practitioners of insured persons may ultimately provide this control; at present there are no data. This fact must be remembered when we consider the results printed in the reports of tuberculosis officers and committees. Dr. Taylor, Tuberculosis Officer, County Borough of Halifax, properly makes the point in his report on "The after-histories of insured persons granted sanatorium benefit during 1914, with a critical review of the facts." He remarks that of 1,914 applicants traced 76.5 per cent. are dead, and of the remaining 23.5 per cent., half are unable to work. But of 17 early cases treated in 1914, only 2 are known to have died of tuberculous disease. Consequently it is no reproach to the theory of the method, still less is it the fault of the committees and their officers that the records of actual results are lugubrious reading. They are, however, lugubrious reading. The County of London Committee records the discharge from sanatoriums in 1919 of 1,484 ex-service males, of 690 civilian males, and of 761 females. Of the first group 699, of the second 294, of the third 293, were unfit for work when discharged; 25, 27, and 23 died in the sanatorium. Midhurst reports that of the 1906–7 discharges, 66.4 per cent. were known to be dead by 1919. The percentage does not fall below 50 until we reach the 1916–17 discharges, of whom 40.1 per cent. were dead by 1919; while of the 184 discharges in 1917–18, 45 (24.5 per cent.) were known to be dead, and 21 had been lost sight of. The statistics of the Newcastle-on-Tyne Insurance Committee are little if at all better. The percentages known to be dead are smaller, but the proportion lost sight of is larger. Of discharges in 1913, 48.4 per cent. were known to be dead in 1919, and 18.8 per cent. had been lost sight of. Of discharges in 1917, 28.8 per cent. were dead, and 11.9 per cent. had been lost sight of. In existing circumstances it does not seem probable that sanatorium benefit can achieve the results which were once expected, and which we all hope may in the future be attained.

PSYCHO-PHARMACOLOGY.

Macht[1] records experimental investigations of the effects of drugs on psychological functions. In a quantitative study of analgesia produced by opium alkaloids, their effect upon the sensory threshold for pain on various parts of the skin and mucous membranes was noted. In any given experiment after determining the normal pain threshold a drug was administered and repeated readings were taken after its absorption. The six principal opium alkaloids ranged themselves, in respect of their analgesic power, in the following order from the strongest to the weakest: Morphine, papaverin, codein, narcotin, narcein,

[1] *Johns Hopkins Hospital Bulletin*, May, 1920.

and thebain. Combinations of morphine and narcotin meconates (narcophin) had a greater analgesic power than was represented by the sum of the effect of its constituents, and a similar action was noted with a mixture of the total opium alkaloids. The various opium alkaloids when applied locally to the skin or mucous membranes were found to have a distinct peripheral effect upon the sensory nerve endings, raising the sensory threshold as shown by the greater stimulation required to produce the first sensation of pain. As in the case of subcutaneous administration it was found that a combination of the alkaloids reinforced each other in their peripheral action. The antipyretics, acetanilid, acetphenetidin, and pyramidon, while not so powerful as the opiates, produced analgesia of central origin. Study of the action of opium alkaloids upon reaction time showed that the simple reactions were less affected than the association tests; thus these drugs influenced especially the higher cerebral functions. The opposite was noted in the case of the antipyretics. The effect of antipyretics on the neuro-muscular test showed that phenacetin, acetanilid, antipyrin, and quinine definitely improved the tapping rate, the improvement after phenacetin and antipyrin being greater than that after acetanilid and quinine; combinations of acetanilid and phenacetin with salol noticeably improved the rate. In studying the effect of opiates and antipyretics on the visual field it was found that the former tended to narrow the field, the latter to increase it. Acetanilid, salol, and aspirin caused a decrease, while antipyrin, pyramidon, and quinine caused an increase of acuity of hearing. Although acetanilid by itself decreased the acuity, an increase followed when it was combined with sodium bicarbonate, and, though impairment followed acetanilid and salol administered separately, in combination they increased the acuity. Studies upon the after-effects of anaesthetics on rats showed that chloroform was followed by a longer period of depression than ether, and that nitrous oxide–oxygen was the least depressing. Of the opiates, morphine markedly impaired the memory habit and activity, while papaverin was the least depressant, but even after large doses the animals eventually recovered their intellectual activities as tested by the circular maze.

TUBERCULOSIS CONFERENCE IN LIVERPOOL.

The National Association for the Prevention of Tuberculosis will hold its eighth annual conference by invitation of the City of Liverpool in St. George's Hall, Liverpool, on October 7th, 8th, and 9th, 1920. The subjects for discussion include a review of methods of prevention and treatment advocated from time to time, the extent to which these have been followed, and the results obtained; practical difficulties in the carrying out of tuberculosis schemes and the best measures to overcome them; milk as a source of infection, and the preventive measures to be employed. The City of Liverpool affords many special advantages for the purposes of the conference, and the various institutions devoted to the treatment or prevention of tuberculosis will be open to visitors. Authorities on tuberculosis from this country, America, and the Continent will take part in the proceedings. The honorary secretary of the Association is Dr. J. J. Perkins, and the office is at 20, Hanover Square, London, W.1.

HEREDITARY SPASTIC PARAPLEGIA.

V. R. Mason and W. F. Rienhoff, jun.,[1] record four cases in three generations—a mother, two sons, and a daughter of one of the sons—of this rare hereditary disease of the nervous system. Since 1880, when Strümpell reported two cases, the records of about sixty affected families have been published. Usually the malady affects individuals in one generation only, but in seven instances symptoms of the disease were present in more than two generations. In a few instances consanguinity, or mental defect of the parents, may have played an etiological part. The age of onset of symptoms is not constant; infantile, pubertial, and adult forms have been described. The sexes are equally affected. There is much evidence in favour of the assumption that the hereditary degenerations of the nervous system, characterized by ataxia alone (Friedreich's ataxia), ataxia and paraplegia (Marie's ataxia), and paraplegia alone (hereditary spastic paraplegia), are all syndromes or clinical forms of the same morbid entity. The fundamental symptom is a spastic paraparesis, which may eventually involve the upper extremities; in addition, there may be tremor of the tongue, usually intentional, ocular palsies, nystagmus, optic atrophy, disorders of speech, and bulbar disturbances. Diagnosis from disseminated sclerosis is often difficult, but the familial occurrence and the absence of remissions are of help in excluding disseminated sclerosis.

[1] *Johns Hopkins Hosp. Bull.*, June, 1920.

Medical Notes in Parliament.

Proprietary Medicines Bill.

Viscount Astor, in moving the second reading of the Proprietary Medicines Bill in the House of Lords on July 29th, recalled the undertaking by the Lord Chancellor last year that such a measure would be produced by the Government, and mentioned that the Select Committee which sat for three years put something like 14,000 questions to witnesses. The recommendations of the Committee were, he said, in the nature of a compromise; they were not based on either of the conflicting views; and it was upon this compromise that legislation was sought. Our country was very much behind several of the Dominions and most other civilized countries in this matter of giving protection to the public. The Committee quoted as an illustration the case of a man who came with a certain instrument to Great Britain, and was reported to have made over £60,000 by sales. He went to France, and was there sentenced to three years' imprisonment as well as heavily fined for trying to sell the same instrument. In the bill presented the Government did not propose to protect the purse of the public. A very good case might be made out for preventing profiteering and exploitation, and it was possible amendments might be moved to strengthen the bill in that direction, but it was not drafted with that object. All they were trying to do was to protect the life and the health of the people. Injury might be caused in one of two ways: from delay—through purchase of these medicines and appliances—in going to a proper medical practitioner; and actual harm through the use of the "remedies." Lord Astor went on to say that it was proposed to forbid the advertisement and sale of remedies for diseases mentioned in the schedule, because serious risk was involved if people tried to treat themselves while suffering from these particular diseases. It was not in the public interest that people haunted by fear and suffering, as they often were from these complaints, should be encouraged to treat themselves by using these patent "remedies." Too often the "remedies" touched only a symptom of the disease. A case was quoted in the report of a particular medicine recommended for children with colds, coughs, and bronchial affections. It contained cocaine or the elements of cocaine. Nobody could recommend the continuance of a law which encouraged people to purchase cocaine in order to make their children sleep when suffering from a cough. Lord Astor referred next to the advertisement of remedies for "female irregularities," and of "remedies" intended to secure abortion. It was impossible, he was told, to kill an unborn child without endangering the life of the mother. Some of these remedies were intended to give lead poisoning. The unborn child might be killed by these means; but too often the mother might be also. Very frequently, too, there was danger of blackmail. A case was quoted by the Select Committee of two men who threatened to expose the purchasers of a particular remedy intended to secure abortion. The police intercepted 600 letters, containing, he thought, two guineas each from women. The Assistant-Director of Public Prosecutions said it was almost impossible to prove fraud. A woman could not be expected to come forward and say, "I bought this remedy in order that I might be able to commit crime.

I have not been able to produce miscarriage. I have been defrauded." This type of remedy was brought before the public indirectly. There was a case of a bottle being sent with the intimation that powerful and certain action of the medicine contained in the bottle necessitated the warning that the contents should not be taken by those expecting to be mothers. Lord Astor went on to explain the general provisions of the bill as regards registration of proprietary medicines, prohibition when considered too dangerous to health, and penalties for infraction of the law. Touching Clause V—that alcoholic contents of a patent medicine must be given on the label—he said that many of the medicated wines contained as much alcohol as some of the heaviest wines and twice as much as claret. One medicine recommended for use at confinement had been found by the Committee to contain something like 60 per cent. of alcohol, and the rest was apparently pure water; this for producing fine and healthy babies! Coming to Clause X—the definition of a proprietary medicine—Lord Astor said it was necessary that the remedy should be what he might call "puffed," advertised, pushed, in writing, as being beneficial for human ailments, and there must be a monopoly. They excluded from the definition of a "proprietary medicine" those proprietary medicines which were not advertised, pushed, nor puffed in writing as being remedies or having therapeutic qualities. They proposed to exclude, for instance, mixtures the composition of which was known, which were made by well-known and reputable chemists, and which were not pushed for sale on the ground that they had any such special qualities. Neither would they include in the definition of a proprietary medicine any recognized drug or preparation for which no monopoly was claimed. It had been suggested in a newspaper that they contemplated setting up a new bureaucracy. They proposed to appoint only one officer—a registrar—and they anticipated that his salary would be met out of the fees charged to owners and vendors of patent medicines. The committee estimated that something like two millions sterling were spent annually in advertising these remedies and appliances in the press, but he had too high an opinion of the press to think that it would oppose the passing of the bill from self-interest. It was not proposed to prohibit all advertising; it was not proposed to deal with what he had just now referred to as profiteering. The press, as well as the State, had an obligation to prevent fraud and danger to health and life by the pushing of the sales of the "remedies" described. In conclusion, Lord Astor asked for support for the bill because it would deal with a real scandal, and would bring this country nearer to the level of other countries.

Debate in the House of Lords.

Lord Askwith, who followed, thought that Lord Astor had not quite brought out the importance and extent of the industry as a whole. Its importance might be judged from the fact that last year more than £1,250,000 were paid in stamp duty to the Inland Revenue. He understood that there were 10,000 retail pharmacists in the kingdom, apart from the bigger shops, with an enormous number of formulae for making these proprietary medicines. The industry employed a very large number of people; it produced a lot of articles, many of which were extremely useful to the community at large, and although the "remedies" to which reference had been made were to be deprecated, there were others which almost every man, woman and child used in the course of the year. There could not be any one in that House who had not at times derived great advantage from taking a proprietary pill. If that was so it was important that the industry should have the opportunity of considering this bill as affecting its interests. In dealing with an industry of this kind Parliament would not wish to create a large number of extra officials—which had been deprecated by Viscount Astor—nor did they wish to impair the usefulness of the industry where such usefulness existed. Nor did they wish it, nor allied industries, to suffer unduly. An industry like this relied upon others, such as bottle making, to assist it; and it also did a great deal of advertising.

Earl Russell welcomed the bill, and said he should be glad to see its provisions strengthened. He believed that the Select Committee had gone at some length into a proposal that every patent medicine of this sort should have its ingredients clearly stated on the wrapper. The Committee had reported against this view, but it seemed to him that if their object was to prevent the public from being defrauded, the best way of doing so was to have stated in the plainest possible language the ingredients of a medicine, instead of allowing it to be described as having been derived from some mystic root found in some South American swamp by some reputed scientific person. Some such statements would be swept away by the bill, but he should put down an amendment in Committee for the actual composition to be stated in these cases. He also thought that so far from the register being confidential its particulars should be furnished to Parliament in the form of a White Paper. He doubted whether there was any instance of any real secret in these medicines which was not known to the *Pharmacopoeia*, and he thought that this part of the register should be made available to the public. He disagreed with Lord Askwith in the description of the business. So far from regarding it as an "industry," the view he took of practically all these patent medicines was that they were fraudulently pilfering the public for profit; and that the only effect was, as Lord Astor had stated in his speech, to increase the injury and suffering of the poor by postponing the time at which they took legitimate and competent medical advice. He noticed that the schedule did not refer to venereal diseases, and assumed that was because a prohibition was contained in another Act. Even so, it might be well, for completeness, that they should be included in the schedule.

Lord Emmott thought it might be desirable that the passing of the measure should be put off until the autumn session, having regard to the importance of the proposals. He should be glad if he were wrong, but he fancied that the efficient carrying out of the work under the bill would require another considerable bureaucracy. He was opposed to the publication of ingredients of medicines. Let them consider the case of manufacturers who had built up a large trade in a beneficent or innocuous article—a trade which would be absolutely destroyed if exhibition of the formulae became law. The circumstances were different, but he had to deal with matters of this sort when he was Director of the War Trade Department. A compromise was arranged by demanding a disclosure of the composition so far as it consisted of articles whose export was prohibited, and thus full disclosure was avoided. The reason he objected to full disclosure unless absolutely essential was that secrets of this kind being disclosed to officials in public departments created a temptation, if there were any unscrupulous persons amongst them, to make money out of the knowledge.

Lord Shandon said he was unable to see any provision in the bill that the articles sold would be as specified in the register in regard to ingredients and proportions. It was an extremely difficult operation to ascertain the proportions in which any of these drugs, and especially vegetable drugs, were used. It would be absolutely necessary that there should be a department or staff, or other means of keeping watch continually, for evasions of the Act. He did not suppose that there would be a dissentient voice in that House as to the part of the bill dealing with medicines purporting to cure certain diseases. But if there was to be a check upon registration there must be analysis; and if on analysis it were found that the article sold did not correspond with what was registered, there would, he supposed, be a prosecution. In that case the contents of the register would have to be disclosed. He did not know whether the common informer would be entitled to move or not; but whoever moved, action might involve disclosure, and that point would have to be considered.

Viscount Knutsford hoped very much that there would be no delay in passing the measure. There were always good reasons for delaying everything, but the amount of suffering these medicines were causing constituted better reasons for carrying the measure as quickly as possible. He need not trouble the House with the number of instances which had occurred within his own knowledge of people damaged and injured for life, and ruined in nerve by the use of these medicines. Lord Knutsford went on to refer to one matter in regard to which he thought that the bill went beyond what was intended. Clause I provided that a man might not make or sell any surgical appliance unless the appliance were registered. Clause II, as he read it, provided that a man might not advertise any surgical appliance as curative, or as relieving certain illnesses, whether it were registered or not. One of the infirmities which therefore might not be advertised as being relievable by any surgical appliance was deafness. It seemed unfair that a man who had invented a machine which relieved deafness should not be allowed to advertise it. Nobody could cure deafness, and no one should be allowed to advertise that he could; but giving relief was a different thing. Lord Knutsford added that he spoke as a sufferer from deafness, who used a machine.

Lord Riddell said he had every sympathy with the proposal to regulate the trade, but this scheme required a good deal of scrutiny. It seemed that an army of officials would be needed to examine and report upon the various patent medicines and appliances. Unless some adequate measures were taken in that respect the bill would be likely to do more harm than good, as it would engender among the public a belief in the efficacy of measures which at present were not applied. He saw from the report of the Committee that the investigation of the contents of one patent medicine involved 1,607 questions to the proprietors, several chemical analyses, and a sort of legal inquisition as to its contents. As he read the bill, moreover, every false leg, every set of teeth sold under a trade mark, every ear trumpet, and a hundred and one other appliances would require to be investigated and registered by the Ministry. The law in regard to venereal disease showed the danger of passing a measure of this sort hurriedly. There was on the statute book a provision that no advertisement should be published regarding remedies for venereal disease. Many of the best known medical men were interested in prophylaxis or early treatment. They were of opinion that the law prevented them from giving advice on the subject publicly. The other day, according to newspaper report, they held a meeting at which they decided to give advice, although undoubtedly committing a legal offence. Meanwhile they were endeavouring to get the law remedied.

Lord Cowley hoped that the Government would not listen to the advice just given as to delay. The measure was one of great urgency. The people who asked the poorest in the country to buy "remedies" which would do them no good were little better than those who sold bogus five-pound notes. It was

a scandal they had been allowed to make huge fortunes out of the most undefended portion of the people.

Lord Astor, replying, was grateful for the general welcome given to the bill. It had, he said, been introduced in the Upper House to secure that it should be available for discussion in the Commons when that House met in the autumn. He promised to go carefully into the question as to appliances for the deaf. As for Lord Riddell's apprehension of "an army of officials," the answer was that the department did not intend to have inspectors going all over the country. They would see that injury was not done to the public by what was advertised. They would, generally speaking, see that the ingredients were what they were reported to the department to be before the owner was authorized to put them on the market. He trusted that the bill would be passed in the near future. There would be no attempt to rush it.

The measure was then referred to Committee of the whole House.

Dangerous Drugs Bill.

The Dangerous Drugs Bill, which has been framed to give effect to the International Opium Convention signed at the Hague in 1912, was considered by a House of Commons Standing Committee on Tuesday, July 27th. Mr. Nicholson was in the chair. Sir J. Baird, Under Secretary for Home Affairs, proposed an amendment to Clause 7, which deals with the control of the manufacture or sale of cocaine, morphine, and other drugs, providing that regulations under the section should provide for authorizing any person who lawfully kept a shop for retailing poisons under the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, (*a*) to manufacture at the shop in the ordinary course of his retail business any preparation, admixture, or extract of any drug to which Part 2 of the Act applies, or (*b*) to carry on at the shop the business of retailing, dispensing, or compounding any such drug, subject to the power of the Secretary of State to withdraw the authorization in the case of a person convicted of an offence against the Act or of an offence under the enactments relating to the customs as applied by the Act and who could not, in the opinion of the Secretary of State, properly be allowed to carry on the business of manufacturing or selling or distributing any such drug. The Secretary of State before withdrawing the authorization is bound to consult the Council of the Pharmaceutical Society of Great Britain. Nothing in any regulations made under the section is to be taken to authorize the sale or keeping of an open shop for the retailing, dispensing or compounding of poisons by any person who is not qualified under the provisions of the Pharmacy Acts, or to be in derogation of the provisions of those Acts for prohibiting, restricting, or regulating the sale of poisons. The amendment was agreed to. Sir J. Baird moved an amendment to Clause 13 (which refers to offences and penalties) to the effect that a person guilty of an offence under the Act should be liable to both fine and imprisonment, and in the event of a second or subsequent conviction to a fine not exceeding £500 or to imprisonment with or without hard labour for a term not exceeding two years, or to both such fine and imprisonment, and the court may in addition order the goods in respect to which the offence was committed to be forfeited. This amendment was approved. Sir J. Baird moved a further amendment to Clause 13 dealing with the time within which proceedings can be instituted, and this was agreed to. A new clause was added giving power of arrest of a suspected person.

It was also decided on the motion of the Attorney-General for Ireland that a new clause should be added to the effect that in the application of the Act to Ireland a reference to the Poisons (Ireland) Act, 1870, the Pharmacy (Ireland) Act, 1875, and the Pharmacy (Ireland) Act, 1875 (Amendment) Act, 1890, should be substituted for any reference to the Pharmacy Act, 1868, and a reference to the Pharmaceutical Society of Ireland should be substituted for the reference to the Pharmaceutical Society of Great Britain. The committee stage was completed and the bill was ordered to be reported to the House.

In the third reading of this measure, which is designed to regulate the import, export, and manufacture of opium and other dangerous drugs, Mr. Stewart drew attention to the quantity of morphine exported from Great Britain to the East. He understood that an immense amount was manufactured in this country, most of it in Edinburgh. He was told that when Customs officers managed to lay hands on parcels going into China, they sent a small sample to the local hospitals, and that hospitals got more than they wanted from this gratuitous source. Dr. Murray hoped that the Home Office would use its power of regulation effectively. The bill was then read a third time.

Finance Bill: Charitable Contributions Allowance.

On report on the Finance Bill, on July 26th, Mr. Chamberlain submitted, in accordance with promise, the new clause to afford an Excess Profits Duty allowance in respect of charitable contributions. The clause agreed to is as follows:

> Where, out of the profits of a trade or business, any contribution has been made after the sixteenth day of July, nineteen hundred and twenty, to any trust, society, or body of persons in the United Kingdom established solely for the purpose of the relief of the poor or the sick, or for the advancement of education, religion, or for scientific research, there shall, for the purposes of Excess Profits Duty, be allowed, in the computation of the profits of the trade or business arising in the accounting period within which such contribution was made, a deduction in respect of such contribution of an amount not exceeding five per cent. of those profits as calculated for the purposes of Excess Profits Duty (before adjustment for increased or decreased capital, and before making any deduction under this section), and not exceeding twenty per cent. of the amount of such contribution. This section shall not apply to any contribution which, apart from the provisions of this section, would be admissible as a deduction from profits for the purposes of Excess Profits Duty.

In the course of the discussion Sir Martin Conway made an unavailing endeavour to get the percentage of concession changed from five to ten. Speaking on behalf of the universities, he pointed out the very limited character of the benefit. As he understood the clause, supposing a man gave £100,000 of the profits of his business he would have excess profits duty remitted on £20,000, provided that the £20,000 was not more than 20 per cent. of the total profits of the year. Mr. Bigland, in supporting the appeal, said that what the Chancellor of the Exchequer had yielded would not bring in anything like sufficient money to the hospitals of the country. Mr. Chamberlain replied that he had done what all his predecessors had failed to do. He had allowed a man to make a subscription to the universities and hospitals and other institutions and to charge a part of it to the State—had allowed him to take the credit and not to take the whole of the cash. Earl Winterton regretted the attitude of the previous speakers towards the concession. The idea that the future of the hospitals or universities depended upon a percentage under this clause was really absurd. The Council of the British Hospitals Association and Sir Arthur Stanley had never said they were dissatisfied with the concession given by the Chancellor of the Exchequer. Personally he was grateful for it, and thought it was as much as could be expected.

Criminal Law Amendment.

The Joint Select Committee of Lords and Commons on the Criminal Law Amendment Bill, Criminal Law Amendment Bill (No. 2), and the Sexual Offences Bill, has adjourned its sittings until the autumn session. The Committee has met five times, and examined fourteen witnesses, largely going over evidence which was given before a committee that dealt two years ago with similar proposals, and was presided over by the same chairman, Lord Muir Mackenzie, but was otherwise differently constituted. Amongst the witnesses were several medical women representing the Women's Medical Federation. Dr. Helen Wilson again gave evidence. The principal criticism of the bills was against the clause to make communication of venereal disease a penal offence. Dr. Helen Wilson, for example, said that at one time she was in favour of a clause somewhat similar, but after going into the matter more carefully she had come to the conclusion that it was not a matter for criminal legislation. Broadly, the opinion expressed was that such a clause would be very difficult to operate, and that it might tend as a deterrent to submission to treatment, and so do more harm than good. Major Farquharson, whose view was pretty clearly indicated by his questions, aided considerably in elucidating the balance of judgement of these witnesses as to a delicate problem.

Medical Treatment during Demobilization Furlough.—Sir A. Williamson, in answer to Captain Coote, on July 28th, said that soldiers on demobilization furlough were entitled to free medical treatment. If the seriousness of a soldier's condition made it impossible for him to report personally, it would generally be practicable for a relative or friend to send the necessary intimation to the military authorities. If this were done, the cost of private treatment up to the time of removal to a military hospital would be refunded. If the soldier were too ill even to arrange for this report, and his relatives were unaware of the correct procedure, a refund of medical expenses would not be refused on that account.

Dentures for ex-Service Men.—Mr. Macpherson, on July 29th, informed Mr. Bryant that the Ministry of Pensions had arranged with a panel of dentists throughout the United Kingdom for the free supply of dentures to those ex-service men who, as the result of illness or injuries due to service, required them. Application should be made by the man to his Local War Pensions Committee.

Poor Law Statistics.—In a reply to Mr. George Thorne, Mr. Baldwin stated, on July 28th, that for the year 1918-19 the estimated average weekly cost for a person relieved in Poor

Law institutions in England and Wales was 21s. 7d.; the estimated average weekly cost of domiciliary Poor Law relief was 5s. 1d. These averages included medical attendance. For Scotland, the average weekly indoor cost was £1 1s. 11¼d; outdoor 5s. 0¾d. The average cost of a prisoner in penal servitude was £2 2s. 9d., and of a person confined in an ordinary prison £1 10s. 10d.

Nursing Staff of Prison Hospitals.—Mr. Shortt stated, on July 28th, in reply to Major Hill, that before an officer could be appointed to the hospital staff of a prison a special course of training at a prison hospital training school was required, and a report of fitness in all respects obtained. A duly trained hospital staff is in the course of formation at Holloway Prison. It will consist of one hospital lady superintendent, two principal nurses, and forty-eight nurses.

The Dentists Bill.—Dr. Addison, in answer to Mr. Raffan on July 28th, said that the bill for carrying out the recommendation of the Departmental Committee on the Dentist Act, 1878, would be introduced before the recess.

Destruction of Rats.—Asked by Mr. Grundy, on July 28th, whether he was aware that rats were now consuming not only the actual sum of the bread subsidy, which amounted to forty-five million sterling, but at the present price of grain nearly twice the amount, Sir A. Boscawen said that any estimate of depredations must be problematical. But his department was making every effort to instruct local authorities as to their duties under the Rats and Mice Destruction Act, and a considerable reduction in the number of rats had been made in the parts of the country where effective measures had been taken.

Experiments on Animals.—On Friday, July 23rd, Sir John Baird moved an address for a return showing the number of experiments on living animals in 1919 on licences granted under 30 and 40 Vic., cap. 77, distinguishing the nature of the experiments.

DOMESTIC SMOKE.

A SMOKE ABATEMENT BILL, which had the support of various smoke abolition societies and municipalities, was introduced in the House of Lords by Lord Newton in 1914,[1] and the President of the Local Government Board appointed a Departmental Committee to examine the state of the law and to make proposals. The work of the Committee was suspended during the war, but in the early part of the present year it was reconstituted, with Lord Newton as chairman, and in view of the many State-aided housing schemes which are now projected or begun has issued an interim report, dated June 1st, on the subject of domestic smoke. The Committee has arrived at the conclusion that even in industrial areas domestic chimneys contribute at least 50 per cent. of the total smoke nuisance, and that at least 6 per cent. (amounting to two and a half million tons annually) of bituminous coal burnt in domestic fireplaces escapes unconsumed into the atmosphere. Domestic soot contains a higher percentage of tar than factory soot, and is therefore more destructive. Allusion is made to the evil effect of smoke pollution on human health, on vegetation and agriculture, and on live-stock and milk; and photographic illustrations are given of the damage to public buildings. The Committee has not attempted to assess the actual economic loss, but quotes the well known Pittsburg figures,[2] which estimate the cost of smoke pollution at £4 a head a year, as well as the report of the Manchester Air Pollution Advisory Board,[3] which found that the extra cost of household washing in a smoky town was £290,000 for a population of three-quarters of a million.

The most important section of the present report is that which deals with methods that might be employed to minimize the production of smoke in new houses, where "a unique opportunity for constructive reform" must not be lost. Since coal burnt in open grates inevitably produces smoke the Committee has examined the value of solid fuels (anthracite, ordinary gas coke, and low temperature coke), mineral oils, gas, and electricity, all of which are smokeless heating agents; it was sought particularly to judge whether their use was practical, hygienic, and relatively economical. Electric cooking and warming, which at present are very expensive, and anthracite heating, which requires special stoves and special arrangements for ventilation, it is considered, do not at present fulfil these requirements. The report deals at length with gas heating and central hot water supply. Almost without exception the witnesses before the Committee condemned the old-fashioned kitchen range and back boiler as inefficient, wasteful of fuel and labour, and productive of smoke, and the Committee records its opinion that wherever a supply of gas is available a gas cooker should be installed in place of a coal range. Several witnesses advocated gas as the best available fuel for the three purposes of domestic warming, cooking, and hot-water supply; as a modification of the "all gas" house, a separate coke-fired boiler can be installed for heating water, and, in the case of a continuous supply will be decidedly cheaper.

The Committee is satisfied that gas cookers and gas fires properly installed are thoroughly hygienic; the use of gas fires has the advantage that by elimination of chimney breasts and stacks, and by the construction of small flues within the wall, considerable economy in building construction may be effected. A central hot water supply is quite practicable in the case of tenement houses, and should be provided universally. For detached houses also it is desirable, if it can be provided at a moderate cost; practical experiments in this direction ought, it is said, to be encouraged. Members of the Committee visited the Austin Motor Company's village, built in 1917, at Northfield, near Birmingham, where each bungalow and house has its own central heating served by a coke stove, which carries hot water to the radiators by means of a "calorifier" and also furnishes the domestic supply. These dwellings were found to be smokeless, economical of fuel, well ventilated, and popular with the tenants; it was estimated that by the installation of this central heating plant and the provision of a gas cooker in each house a saving of £30 had been effected in the initial structural cost of each bungalow. The amount of coal necessary to maintain the hot-water supply and warm the whole house, in which cooking was performed by gas, was 1¾ cwt. a week. The Committee believes that for the heating of rooms gas fires or hot-water radiators should entirely supersede the old-fashioned open coal grate. It recommends that in none of the houses built with the assistance of the Government subsidy should more than one or, in exceptional circumstances, two coal grates be installed; it appears that even this single coal grate is allowed somewhat reluctantly, in deference to the strong prejudice in its favour which still exists in many quarters.

In common with the majority of those who have studied the question of domestic heating, the Committee was struck by the absence of full and scientific knowledge on this question; one of the most important of their conclusions is given in Section 63, where they say, "We think that the whole subject of hygienic and scientific heating deserves a very much greater measure of public attention than it has hitherto received." The two other most important recommendations of the Committee are that (1) the central housing authority should decline to sanction any housing scheme submitted by a local authority or public utility society, unless specific provision is made in the plans for the adoption of smokeless methods for supplying, where practicable, the required heating; and that (2) gas and electricity undertakings should be given every facility and encouragement to cheapen the supply of gas and electricity, and that the practice adopted by municipal authorities of overcharging in order to relieve the rates should be discontinued.

In judging the value of the report the amount of the additional expenditure which the adoption of its recommendations would entail is, at the present time, a factor of great importance. The Committee has considered this matter carefully. It is pointed out that where it is decided to utilize gas or electricity for cooking and heating, or to install central heating or central hot water supply, considerable economy can be effected in the initial structural cost; but even if in exceptional cases slight additional expenditure is involved it is well worth while.

"For if, as is the case, it is considered worth while to incur extra expense by building houses on town-planning lines for the sake of amenity, then, if only for the same reason, it is sound policy to incur extra expenditure in order to avoid smoke. Further, it is our considered opinion that, in view of the very serious damage occasioned by smoke, the economic gain to be effected by the elimination of smoke would more than counterbalance any slight additional expenditure."

[1] BRITISH MEDICAL JOURNAL, March 28th, 1914, p. 733.
[2] The Economic Cost of the Smoke Nuisance to Pittsburg. University of Pittsburg, Department of Industrial Research, 1913.
[3] BRITISH MEDICAL JOURNAL, May 22nd, 1920, p. 721.

England and Wales.

PRESENTATION TO MR. F. C. LARKIN.

AT the Liverpool Medical Institution, on July 21st, a large and enthusiastic gathering of medical men from Lancashire and Cheshire assembled to do honour to Mr. F. C. Larkin, who has recently retired from the active surgical staff of the Stanley Hospital, Liverpool. The chair was taken by Sir James Barr, Chairman of the Presentation Committee, who called on Mr. F. Strong Heaney, the Secretary, to read the address, signed by 161 subscribers, which was presented to Mr. Larkin, together with Haig's etching of St. Edmund's Chapel, and a cheque. The address referred to Mr. Larkin's long and brilliant career at the Stanley Hospital, his work as honorary secretary of the Lancashire and Cheshire Branch, and as Chairman of the Organization Committee of the British Medical Association, a post which he held during a critical period. The testimonial is in recognition of his long and arduous work on behalf of his professional brethren. Sir James Barr then sketched Mr. Larkin's career as a university teacher, as a surgeon and a worker for the betterment of the medical profession. He dwelt on the factors of character and training which had contributed to Mr. Larkin's success, and pointed to his work for the profession as an example of what men in his position might achieve for their fellows. The chairman was followed by Drs. Barnes, Edwards (Widnes), Gemmell, Nevins, Richardson, Logan, and Paterson, and by Professor Rushton Parker and Mr. Newbolt, each bearing testimony to different aspects of Mr. Larkin's work. Mr. Larkin replied, and after thanking his friends for their presentation gave an interesting account of that part of Westminster Abbey which formed the subject of the etching presented to him.

POST-GRADUATE COURSES AT NEWCASTLE.

The first post-graduate course held under the joint auspices of the Council of the College of Medicine, the honorary medical and surgical staff of the Royal Victoria Infirmary, Newcastle-on-Tyne, and the British Medical Association (North of England Branch) has just been completed. The course was well attended, and has been in every way a complete success. This success and the wish expressed by a large number of practitioners has encouraged the committee to continue the courses during the coming winter. The syllabus, which is under consideration at present, will be a revised and extended one. A further announcement will appear in this JOURNAL in due course.

LYING-IN HOMES IN LONDON: PROPOSED NEW REGULATIONS.

The London County Council will apply to Parliament next session for an amendment of the London County Council (General Powers) Act, 1915, so far as it relates to the supervision of lying-in homes. Four years' experience of the regulations has shown that they are inadequate. The amendments suggested are:

1. That an applicant for registration as keeper of a lying-in home should be required to disclose further particulars about himself and the premises and their equipment.
2. That the power to refuse or cancel registration should be exercisable against a person on the ground that he is "unsuitable," instead of on the uncertain ground, as at present, that he is "of bad character."
3. That no licence should be granted to anyone under 21 years of age.
4. That the Council should be empowered to make by-laws governing lying-in homes, prescribing the records to be kept, the number of patients to be accommodated, and the equipment to be used, and requiring that all deaths of patients shall be notified to the Council.

The requirement to notify deaths is imposed on midwives by the Midwives Acts, but this does not apply in the case of keepers of lying-in homes who are not midwives, and of 237 lying-in homes at present on the London register the number of keepers who are midwives is only 136. The Chairman of the Central Midwives Board, to whom the proposals have been submitted, has expressed the opinion that they are desirable.

Scotland.

EDINBURGH ROYAL MATERNITY HOSPITAL.

AT a somewhat belated annual meeting of the Edinburgh Royal Maternity Hospital, held on July 30th, some interesting figures were given showing the remarkable increase in the hospital's activities during 1919. Bailie Hutchison presided and moved the adoption of the report, referring to the increase of 326 in the number of confinements which had taken place in 1919 in and in connexion with the hospital, and pointing out that of the 2,262 patients attended 1,036 had been delivered inside the building and the remainder (1,226) in their own homes. It had consequently been a difficult matter to find sufficient accommodation for the cases dealt with, and the directors, by acquiring properties within easy reach of the hospital, had made temporary provision for the growing demand, but it was now abundantly evident that the building and equipping of a new and up-to-date hospital was a clamant necessity. Sir Ludovic Grant, in seconding the adoption of the report, spoke with satisfaction of the agreement which had been arrived at between the hospital directors and the university authorities. The closer relations established—details of which were given in the JOURNAL for June 12th, p. 809—would be of great benefit to both institutions. He referred to the favourable features to be found in a record number of patients and in the firm establishment of the antenatal clinics as part of the machinery of the hospital; on the other hand he thought that the statistical part of the report afforded food for anxious thought, and emphasized the utter insufficiency and lamentable inadequacy of the hospital in relation to the city at present and still more to the future needs. Major-General W. B. Bannerman expressed his admiration for the work which was being done in the antenatal department and in that devoted to the care of the venereal diseases complicating childbirth, and stated that in India and in other parts of the world obstetricians looked to Edinburgh Royal Maternity Hospital for guidance in these new developments. They had of recent years begun similar antenatal work in Madras. The total number of attendances at the antenatal clinics during 1919 had been 1,414, as compared with 947 in 1918, or an increase of 467. Of the 1,414 cases, 701 were new cases and 713 were revisits.

THE CALEDONIAN MEDICAL SOCIETY.

The annual meeting of this society was held in the Committee Room (Prince Charlie Room) of the Public Library, The Wardwick, Derby, on July 24th, under the presidency of Dr. Rutherford Macphail. The society holds annual meetings alternately in England and Scotland, but it has not previously held an annual gathering since 1914. It differs from all other medical societies in these respects: Each member must possess a university degree, and must have Celtic blood in his veins. Further, it devotes special attention to old Celtic literature in relation to medical science. The society has a membership of 300, in addition to some 25 honorary members belonging to other professions. Dr. Macphail, who was President for the second time, took as the subject of his address, "Derby and the 'Forty-five.'" The annual dinner was held the same evening, when the toast of the Society was proposed by Dr. F. Milnes Blumer, Mayor of Stafford. The next annual meeting will be held in Edinburgh, under the presidency of Emeritus Professor William Russell of Edinburgh.

SMALL-POX IN GLASGOW.

A report by the Glasgow Public Health Department dealing with the outbreak of small-pox in that city states that up till July 25th 379 patients had been admitted to hospital, all but 11 being from within the city. One hundred of the patients were children under 15 years of age, of whom 73 were unvaccinated. Of the remaining 27 children, who had been vaccinated in infancy, not one died, while 20 of the unvaccinated group died. The percentage death rate among the unvaccinated children was thus 27. The group of those aged 15 and over contained 279 patients; six were unvaccinated and five of these died. Of the remaining 273 vaccinated in infancy, 36 have died. The mortality among the unvaccinated

patients of all ages was 34 per cent.; among those who had been vaccinated in infancy the mortality was 12 per cent. It is added that so far no cases have occurred among the medical, nursing and administrative staff engaged in dealing with the patients. Since the beginning of general vaccination in Glasgow 154,410 persons have been vaccinated.

Correspondence.

BONESETTERS *VERSUS* THE SCIENCE AND ART OF SURGERY.

SIR,—I read the letter of my friend, Dr. William L. Griffiths of Swansea, on the better treatment of fractures, published in the JOURNAL of July 24th, p. 139, with great interest. While I agree with his suggestion about Major Sinclair, I do not think he goes far enough in what he says as to the outlook for the better treatment not only of fractures but of injuries to joints also. On that account I suggest that correspondence should be directed to the bigger problem opened up by the title I have put to this letter.

Recent experiences, social and medical, have recalled to my mind how I had myself to go through the mill some years ago in connexion with a branch of surgery—injuries in the neighbourhood of joints—into which bonesetters poke their noses and still hold sway and power. The metropolis possesses a unique body of eminent surgeons, but it has its bonesetters also. Cardiff and Swansea, within my knowledge, and other big towns in the British Isles, according to report, have their share of these men, who enjoy the reputation of being able to do wonders for troubles in bones and joints which are considered beyond the ken of the general practitioner and consultant.

It is worth while to consider why this is so and what has given rise to the existence or evolution of bonesetters. A pregnant phrase in the memorable address given by Sir Clifford Allbutt at Cambridge supplies one of the factors for the solution of the problem:

> The half medieval teaching of Medicine in the Oxford and Cambridge of my undergraduate days was deficient in solids; we were not even examined in surgery or midwifery; but we got far more of the imponderables. . . . The artist and the craftsman live their lives now in an alien world.

How then could a doctor when going through his curriculum acquire the knowledge and the practice in the handicraft of bonesetting which is so necessary? The handicraft of surgery was not thought worthy of recognition, perhaps because people remembered that the barber-surgeon was the father of the modern surgeon.

Another experience was a war recollection revived by Major Sinclair's demonstration of how to deal with fractures. It is a fact that the treatment of fractures by members of the profession during the war was so inefficient that a special department had to be created to remedy the defect. That defect was due to the manner of training the student in the art as well as in the science of surgery. I feel sure that to-day it would be a desirable innovation to establish orthopaedic departments in every medical school on the lines adopted by the War Office in order that the student might learn the methods of the Liverpool school, created by H. O. Thomas and worthily carried on by his nephew, Robert Jones. Yet another experience was recalled by a remark made by the Lord Chief Justice of England at the American Hospital dinner in London a few weeks ago, when he said, "We in London had much to learn from Paris, and vice versa." This brought to my mind the days when Lucas-Championnière practised treatment of fractures by massage and immobilization in Paris for a long time before his methods and their success became generally known in this country.

The great problem is how to put our house in order with regard to bonesetting. Its solution practically resolves itself into adequate training in the handicraft of surgery at our medical schools. A method of teaching in the laboratory and workshops by demonstrations and practice on models under competent teachers must take the place of the acquired habit of uncritical acceptance of authority as laid down in textbooks.

Let me take as an example Colles's fracture, the commonest of all fractures in the upper extremity. I confess that for nearly half my career I did not know the best method of treating it. Look up any modern textbook and you will find that the best method of reducing the deformity is not mentioned; in almost every instance a flat wooden splint is recommended. Just fancy in the twentieth century using a flat splint to a rounded surface! It is a regression from the Pharaonic days, for the old Egyptians knew better. The crippling of a hand, due to the methods of treatment, is one of my sad surgical experiences. Even during the war I inspected a hospital where a chauffeur's fracture was in splints at the end of seven weeks! I remonstrated with the surgeon-in-charge, and to emphasize my point invited him to see my own chauffeur, who had had a similar fracture, but was driving a car with the damaged hand within a month after the accident.

Take again the commonest of fractures in the lower extremity, "Pott's"; here also the same observations hold good. The bad setting of this fracture is as unsatisfactory as in the case of Colles's fracture, and later on the orthopaedic surgeon is called upon to remedy, by a serious operation, a deformity which could have been prevented had the training of surgeons been efficient.

Like a good many other surgeons, I have sometimes wondered why bonesetters enjoy the confidence of the public; but, on investigating the facts, I came to the conclusion that it was often the fault of the medical practitioner to whom the patient first went for treatment. Quite recently a well-known man met with an injury to his knee; he was treated at home and recommended by his doctor to a hydropathic establishment; lameness from a stiff joint continued, and he was advised by many friends to go to a bonesetter. Fortunately, he went to an orthopaedic surgeon (Major Alwyn Smith) who was in charge of a military orthopaedic hospital, and was cured within five minutes. It is this type of case that forms the bulk of the "wonderful cures" of bonesetters.

I have had the privilege of seeing war surgery amongst our allies in France, Italy, and Serbia, and the treatment of complicated surgical deformities of limbs in those countries was not any more satisfactory than our own, except in special orthopaedic hospitals.

A beginning has been made at St. Thomas's Hospital to put the treatment of fractures on a sound basis; is it too sanguine to hope that this is the prelude to the establishment of similar clinics in every teaching medical school? Until this is done bonesetters will still continue to flourish, though Mr. Hugh Owen Thomas, the father of the Liverpool school of orthopaedic surgery, said some forty years ago that—

> He felt it his duty to record his experiences of a personal visit to some thirteen unqualified practitioners in the occult art of bonesetting, and that many of them are only successful competitors with shrines, relics, and other nervine remedies, and he certainly would not advocate the addition of even a genuine relic to the surgeon's armamentarium.

A treatise dealing with the best method of reducing fractures and describing the best type of splint to use in individual injuries of limbs would be a great boon to the rising medical generation; alternative methods of treatment should survive only in histories of the surgery of the dead and gone past.

I have been through the gamut of operative procedures for fractures, and, like my friend Dr. Griffiths, have come to the conclusion, though from another standpoint, that there is great need of reform in the treatment of fractures and injuries to joints.—I am, etc.,

Cardiff, July 27th. J. LYNN-THOMAS.

VITAMINES.

SIR,—I notice that in the discussion at Cambridge on vitamines Professor Hopkins referred, more in sorrow, perhaps, than in anger, to a recent remark of mine on the vitamine "stunt." I hasten to assure him that in using that expression I did not mean to imply any disbelief in the existence of vitamines or in the part their absence from the diet plays in the production of certain diseases. I did intend, however, to utter a warning against the overbooming of vitamines and their significance in pathology. I pointed out at the time that there have been in the past other dietetic "stunts"—such as the purin-free diet—which suffered from too enthusiastic an advocacy, with the result that they have now fallen into an only partially deserved

disrepute. I fear this may happen again in the case of the vitamines. When we find one speaker at the Cambridge discussion expressing the view that all diseases are deficiency diseases, and another—oh, shade of Koch!—stating his "firm conviction" that tuberculosis "is a deficiency disease," it will be admitted that such a warning is not unnecessary.

Of course Professor Hopkins and his scientific co-workers are not to be blamed for the "booming and boosting" of vitamines. It is carried on by those individuals—and they are fairly numerous both within and without the ranks of the profession—whose ears are always pricked for the *dernier cri* and who hasten to apply with uncritical minds the incompletely verified hypotheses of the laboratory to the complicated facts of clinical medicine.—I am, etc.,

London, W., Aug. 1st. ROBERT HUTCHISON.

MORTALITY OF VENEREAL DISEASES.

SIR,—Mr. Charles Russ should look before he leaps into an accusation of "serious misstatement." I cannot but express my surprise that an honorary physician to the Electrical Department of the Male Lock Hospital should suppose that the lethal effects of venereal diseases are summed up in the mortality attributed to them in the Registrar-General's report.

In my remarks at the Ministry of Health I pointed out that the deaths ascribed to venereal diseases by the Registrar-General (2,018 in 1919) give a wholly inadequate idea of the destruction of life for which they are responsible. I quoted Dr. Amand Routh, who traces to them 20,000 antenatal deaths, and mentioned that general paralysis and locomotor ataxia, which are of purely syphilitic origin, cause nearly 3,000 deaths annually. I described syphilis as the hidden hand in pathology, which is really accountable for a large proportion of the mortality that is generally believed to be due to other diseases, such as aneurysms, angina pectoris, organic heart disease, cerebral haemorrhage, softening of the brain, Bright's disease, and epilepsy. I followed the late Sir William Osler in giving syphilis the third place amongst the great killing diseases. In the standard statistics of the American Social Hygiene Association it is placed first of all, even above tuberculosis.—I am, etc.,

London, W., Aug. 2nd. JAMES CRICHTON-BROWNE.

SIR,—Unless Dr. Russ's letter in to-day's JOURNAL is intended as a subtle demonstration of the worthlessness of the Registrar-General's report as an index of mortality due to venereal disease, he must be presumed to be ignorant of this fact. The statement that no deaths are ascribed to gonorrhoea in the report is sufficient alone to show this, for gonorrhoea is well known to be one of the principal causes of pelvic inflammation in women, many cases of which are fatal. The deaths certified as due to venereal disease are nearly all hospital cases; in private practice they are seldom if ever certified as such, for reasons which are obvious. Besides, if a man dies from aneurysm, cerebral haemorrhage, or any of the numerous conditions which are due to syphilis, the cause of death is certified as such, and not as syphilis.

Dr. Russ refers to Sir James Crichton-Browne's description of tuberculosis, cancer, and venereal diseases as the "three chief killing diseases" as "a serious misstatement of fact." If there is any misstatement it errs on the side of moderation; he might have said "two" instead of "three." Taking syphilis alone, the only question is whether this comes second or third after tuberculosis. The late Sir William Osler placed it third; other investigators place it second among the killing diseases.

Runeberg of Helsingfors, investigating the mortality caused by syphilis in connexion with life assurance, found that syphilis was a cause of death in 11.4 per cent., and that if cases of cerebral haemorrhage and cardiac disease probably due to syphilis were included the percentage rose to 15. This placed syphilis second to tuberculosis and above pneumonia in this series of cases, the mortality due to tuberculosis being 21 per cent. and to pneumonia 10 per cent. during the same period of time. Audry, in his essay on the mortality of acquired syphilis, arrives at about the same figure, namely, 14 or 15 per cent. These figures only concern acquired syphilis, and do not take into account the vast number of deaths due to the inherited disease. If we include these, and also deaths due to the complications of gonorrhoea, venereal disease will come easily second as a cause of death. Further, if we recognize the fact that syphilis is a predisposing cause of tuberculosis, venereal diseases as a direct or indirect cause, might be placed first among the killing diseases.—I am, etc.,

London, W., July 31st. C. F. MARSHALL, M.D., F.R.C.S.

SIR,—Dr. Russ, in your issue of July 31st, says it is a serious misstatement for venereal disease to be included among the three chief killing diseases, and as evidence mentions that the total deaths assigned to syphilis in the report of the Registrar-General for 1917 amounted to 2,127. But the figures of the Registrar-General cannot be expected to give correct information as regards mortality from syphilis and alcohol.

Sir William Osler, in the Lettsomian Oration before the Medical Society of London in 1917 (fully reported in the BRITISH MEDICAL JOURNAL of May 26th, 1917), stated that in the report of the Registrar-General for 1915 syphilis was responsible for 1,885 deaths, and was placed tenth in the list of killing diseases, whereas by careful study of the figures Sir William estimated the deaths from that disease in that year to have been 60,000, and from tenth place as killer he placed it "at the top—an easy first among the infections." Locomotor ataxy and general paralysis in 1915 accounted for 735 and 2,263 deaths respectively.

Sir Victor Horsley, in a letter to *The Times* in 1914, wrote:

> "Owing to the present system of registration our public health statistics are not only exceedingly faulty but in many cases, such as venereal disease and alcoholism, also utterly misleading."

It is to be hoped that not only in Parliament but also on every local governing body members of our profession will be elected, as it is our duty to help and guide the public in such questions. From my experience during six years as member of the borough council for Paddington, such matters frequently appear on the agenda.—I am, etc.,

London, W., Aug. 2nd. HENRY H. STURGE.

DILATATION OF THE HEART.

SIR,—One cannot help being struck at the present day by the large number of people who are said to be suffering from dilatation of the heart, and the authoritative way in which the diagnosis is made makes one hesitate to raise any doubts. The diagnosis is essentially based upon the increase of the precordial dullness, and a displacement of the impact of the apex upon the surface wall of the chest associated with certain subjective symptoms, and as a matter of fact the mere position of the impulse is held to be sufficient to determine whether there be dilatation or not.

The teaching of to-day is different from what it was ten years ago, but the number of practitioners who "carry on" on the lines laid down by their teachers makes one feel justified in quoting from an address by Sir James Goodhart in 1910, wherein he said: "When the history of medicine for our period comes to be written I incline to think that the Recording Angel will have some criticisms to make upon the teaching of those who, upon the strength of what is a most unreliable method of examination, have insisted so much upon an as-it-was and as-it-is demonstration of the size of the heart."

Insurance companies, advised as they are by teachers at the medical schools, persist by their questions in treating the impulse in relation to the chest wall as constant, irrespective of the many conditions that tend to alter it, and, as this method seems to give a good average of success from a business point of view, it tends also to give it a sort of scientific assurance as well.

Apart from the difficulty of recognizing a small increase of precordial dullness, we must remember that this increased dullness may be due to some disturbance of the pericardium either in the form of an effusion or a more definite form of inflammation, for, as the late Sir William Osler pointed out in his *Principles of Medicine*, a large number of excellent observers have acknowledged their inability to distinguish between pericarditis and dilatation.

As a factor, however small, the suction action due to the negative intrapericardial pressure, to which I drew

attention in 1915, requires to be taken into consideration when making a diagnosis, for in health, as a result of that suction, the pericardial fluid is kept at an equal thickness all round the heart. Any disturbance of that suction action, probably associated with a change both in the quantity and the quality of the fluid, is more likely to be revealed than a lesion seated more deeply within the heart itself.

Sir James Mackenzie has stated that "the factors producing dilatation are still obscure, and apart from the mystery associated with obscurity, there is also much room for speculation"; and, I would add, but little ground for authority.—I am, etc.,

Swansea, July 12th. G. ARBOUR STEPHENS.

DISLOCATION OF HUMERUS BY MUSCULAR ACTION.

SIR,—This note on a case of dislocation of humerus by muscular action may be of interest following on the report of a case by Dr. F. W. Morton Palmer (p. 126).

R. H. E., a strong powerful man, was for several years the subject of epileptiform convulsions, which invariably occurred during the sleeping hours of the early morning. On no less than four occasions on the cessation of the seizure the right humerus was found to be dislocated (subcoracoid), and on two instances, owing to the strong muscular resistance, an anaesthetic was found necessary for the reduction of the dislocation.—I am, etc.,

W. EAMES,
Haslemere, July 26th. Surgeon Rear Admiral R.N. (retd.)

SIR,—Referring to the paragraph in the JOURNAL of July 24th, p. 126, headed "Dislocation of humerus by muscular action," and the statement of Dr. F. W. Morton Palmer that this complication of an epileptic fit must be rare, may I, as one who has authority to speak on this point, having been medical officer of the large epileptic colony in Maghull for over thirty years, state that this complication of an epileptic fit is by no means rare? I have reduced shoulders both with and without an anaesthetic many dozens of times, and have had many patients in the colony in whom on many occasions this complication has occurred during an epileptic seizure.—I am, etc.,

J. F. GORDON, M.D.,
Medical Superintendent, Epileptic Colony,
July 28th. Maghull, near Liverpool.

LUPUS AND SYPHILIS.

SIR,—The interesting communication of Dr. H. G. Adamson in your issue of July 24th would have had its value much enhanced had the author obtained, or stated if he had obtained, the results of the Wassermann test in each of his cases.

It has during the past year come under my observation that a number of cases treated unsuccessfully by *x* rays and other means as "lupus" during a period of years have yielded a positive Wassermann reaction and improved at once under mercurial applications and antisyphilitic treatment.—I am, etc.,

A. LAIRD, M.B.,
July 27th. Royal Infirmary, Dundee.

*** In order to settle this point, we have sent a proof of Dr. Laird's letter to Dr. Adamson, whose reply follows:

SIR,—Dr. Laird, in his remarks upon my communication of July 24th upon the treatment of lupus vulgaris by means of the liquid acid nitrate of mercury, makes the suggestion that the good results claimed may have been due to the cases so treated having been, not "lupus," but tertiary syphilis.

Lupus vulgaris is unhappily a too familiar complaint in a London dermatological clinic, and an intimate knowledge of its clinical features renders the diagnosis from syphilis generally easy, and is, moreover, of far more practical value than an appeal to the elusive aid of a Wassermann test.

As the thirty or more cases upon which this treatment has been tried with success were in attendance in the skin department of St. Bartholomew's Hospital, it is, I think, improbable that all, if any, of them were cases of unrecognized syphilis wrongly diagnosed as lupus vulgaris.—I am, etc.,

London, W., July 30th. H. G. ADAMSON.

THE WASSERMANN REACTION.

SIR,—I have, ever since the introduction of the Wassermann reaction, both in articles and books, emphasized my opinion that while the Wassermann reaction is a most valuable servant it is an unreliable master. This test is not pathognomonic of syphilis and is often contradictory, different results being obtained at different laboratories and on different occasions at the same laboratory with no intervening treatment.

In view of Colonel L. W. Harrison's statement in his recently published *Manual of Venereal Diseases for Students*, page 103, "Excluding the above mentioned diseases one can say that a positive reaction justifies a diagnosis of syphilis," and the Government publications (National Health Insurance, 14, 21, 23, and Report on Public Health and Medical Subjects, No. 1), it would appear advisable to collect and publish the large amount of evidence now available suggesting that the report of a Wassermann reaction test as employed at present is not sufficient evidence alone on which to base a diagnosis of syphilis or to exclude this disease. I therefore venture to appeal to your readers to give me the help of their experience and to forward me instances of apparent unreliability of the Wassermann reaction of which they have personal experience, especially in regard to

1. Contradictory results at different laboratories.
2. Contradictory results on different occasions at the same laboratory with no intervening treatment.
3. Occasions where the clinical evidence and Wassermann reaction have been in opposition—namely:
   (*a*) Undoubted clinical evidence of active syphilis with a negative Wassermann reaction.
   (*b*) Cases apparently free from old or present syphilitic infection with a positive Wassermann reaction.

When making my report on the unsatisfactory results forwarded to me by your readers I propose to publish the practitioner's name in connexion with the evidence he or she is good enough to forward me, unless I am expressly requested not to do so.—I am, etc.,

143, Harley Street, W., July 30th. H. WANSEY BAYLY.

PLEURAL REFLEX SYNCOPE.

SIR,—Apropos of your editorial of July 3rd upon pleural reflex syncope, I have just received a press cutting of a case of fatal syncope during an operation for empyema, and I think that such occurrences are by no means so uncommon as your remarks would imply.

No doubt much may be accomplished in pleural surgery with perfect safety under a suitable anaesthetic, but when, as is frequently the case, chloroform is selected, and the patient only lightly anaesthetized, the trap is set for the chance of a catastrophe.

I wish particularly to criticize the suggestion which is quoted in your article, that such fatalities are due to a reflex vagal action. There is no evidence to justify such a conclusion; a brief cessation of the heart-beat may sometimes be evoked in animals by a reflex excitation of the vagus centre, but nothing approaching a fatal syncope has ever been recorded. Notwithstanding this, the myth of a reflex vagal death persists in medical literature.

In cases of chloroform syncope the reflex from the pleura, if such be actuating at all, will be motor sympathetic in character; this only affects the heart seriously when the chloroform anaesthesia is light, and, so far as we are at present aware, does not give rise to alarming symptoms under any other ordinary circumstances. There is thus no reason to allow the fear of a reflex vagal syncope to restrain the performance of operations upon the pleura.—I am, etc.,

London, W., July 20th. A. G. LEVY.

PUBLIC HEALTH SALARIES.

SIR,—I am extremely glad that my letter of July 17th has given Dr. Heaney an opportunity to correct the incomplete report of his remarks on the above subject at the Representative Meeting.

The British Medical Association, however, by fixing a minimum salary for whole-time junior appointments, and by continuing to accept advertisements for these and other whole-time appointments that are admittedly underpaid,

are a party to the indefinite multiplication of such appointments, and to *the education of the public to underestimate the value of a medical education.* It is this policy of "drift" which is dangerous to the medical profession at the present time. As it stands, the resolution to which Dr. Heaney gave his support is not likely to receive much consideration from recalcitrant authorities in view of the recent difficulties experienced in persuading local authorities to adopt the £500 a year minimum for all junior appointments.

The time has surely arrived for the British Medical Association to adopt a definite policy on a matter which will have far-reaching effects on the future of medicine.—I am, etc.,

W. H. DAVISON.

Birmingham, July 27th.

*** Our correspondent perhaps does not appreciate all the difficulties. The British Medical Association has not allowed this matter to "drift," but on the contrary has refused a large number of advertisements because they showed no increase on pre-war salaries. It has adopted a minimum of £500 for junior appointments, and it accepts no advertisement for a senior appointment which does not show a substantial increase on pre-war salaries. It attempted to arrive, in conjunction with the Society of Medical Officers of Health, at a new scale which would cover all medical officers, but this was not approved by the Representative Meeting for reasons which seemed good to a body containing a number of medical officers of health. The Association and the Society of Medical Officers of Health are together to attack this problem in the immediate future, and there is no doubt that a way will be found of improving the conditions of medical officers in the public health services just as has been done for those in nearly every other service.

PROPOSED TELEPHONE CHARGES.

SIR,—I have failed to find any reference in the JOURNAL to the proposed new rates of subscriptions for telephones. At present the rate is £5 for the instrument and 500 calls, those calls used in excess of this number being charged at a defined rate. It is now proposed to charge £7 10s. (in the provinces, with exceptions) for the use of instrument and 1½d. for each call. The excuse is that the small user now pays for the calls of the large user.

Under the new rate the user who makes 500 calls a year will pay over 5d. a call, while the user of 5,000 calls will pay a trifle over 2d. a call! This appears to me to be a case that the British Medical Association might well take up in the interest of the practitioners who are mainly small users.

The most equitable method appears to be a rental which includes a certain number of calls—say, the equivalent to the rental at 2d. or 3d. per call, and all extra calls to be charged at the same rate per call.—I am, etc.,

F. DE COVERLY VEALE.

Mumbles, July 24th.

Obituary.

JOHN GRIMES, M.D., B.Sc.LOND., M.R.C.S.ENG.,

Grassenda'e, Liverpool.

WE regret to record the death of Dr. John Grimes, of Grassendale, Liverpool, at the age of 77, which took place at his residence on July 25th. He took the B.Sc. degree of London in 1865, the M.B.Lond. and the M.R.C.S. the following year, and the M.D. in 1870. In 1871 he settled in Grassendale and quickly built up an extensive practice. He joined the Liverpool Medical Institution in 1872 and so would have celebrated his jubilee in a couple of years had he lived. He was able to retire from practice at the age of 60 and devoted much of his leisure to public work which he loved, and in which he was eminently successful. The older members of the community remember with gratitude the gracious personality and uniform kindness which marked his practice and which were associated with a recognized skill in his profession. His interest was at all times exercised on behalf of the poorer people, and after his retirement he devoted himself without stint to their service. He was elected as one of the representatives of Garston on the West Derby Board of Guardians, of which he subsequently became chairman, having served on nearly all the committees.

Recognizing the paramount importance of centres for hospital treatment near the homes of the people he worked hard, together with the other local practitioners, to provide a general hospital in Garston in place of the old Local Government Board hospital, which was only for accident cases. Subscriptions were obtained, but it was not until a generous grant from the estate of the late Sir Alfred Jones was secured, together with a grant from the Corporation, that the present beautiful Sir Alfred Jones Memorial Hospital was erected and opened in 1916. Dr. Grimes was made the first chairman of the committee. He was also a member of the executive of the Liverpool Central Relief Organization, and an enthusiastic supporter of the University Extension Movement, being for many years chairman of the Grassendale Society for University Extension. His home was a centre of culture, and for many years was the head quarters of various committees. He was engaged in committee work up to within a week of his death, and may be said to have died in harness. His was a fine character, the type of the general practitioner that has exalted the profession of medicine. He leaves a widow but no children. Prior to cremation a largely attended service was held in Grassendale Parish Church, of which he was for years a sidesman.

THE death took place recently, at the age of 66, of Dr. JAMES ISAAC PADDLE, medical superintendent of the lunatic asylums of Mauritius. Dr. Paddle had a distinguished career, first at the Royal College at Mauritius, and later at University College, London, where he won an entrance exhibition, many gold medals and prizes, and the Gilchrist scholarship. He became a Fellow of the Royal College of Surgeons in 1880 and obtained the B.A., B.Sc., and M.D. degrees of the University of London. On his return to Mauritius he held a succession of posts under the Government, and eventually became superintendent of the Government lunatic asylum—a post which he retained without taking a holiday for twenty-five years. Dr. Paddle died at Bournemouth, during his first leave of absence, from malaria complicated by influenza and pneumonia. Dr. D. E. Anderson (London) writes: Dr. Paddle had a high sense of duty, and was held in great esteem by everybody in the island. He was upright in his dealings, and to his meekness he added the virtue of piety. His judgement was held in high esteem by his fellow practitioners. He leaves a widow and a large family, of whom two sons fought in the war, and one—now a student of medicine—received the Military Cross.

The Services.

STANDARD ARTIFICIAL LIMBS FOR PENSIONERS.

FOR over three years the Ministry of Pensions has had under consideration the standardization of the types of artificial legs supplied to pensioners, the object being to facilitate repair and replacement. Work upon this standardization was carried out last summer by a committee under the chairmanship of Admiral Sir Reginald Bacon, and completed by the Minister's advisers, Sir Charles Kenderdine, K.B.E., Director of Artificial Limb Supplies, Mr. T. H. Openshaw, C.B., C.M.G., F.R.C.S., Mr. E. Muirhead Little, F.R.C.S., Mr. R. C. Elmslie, C.B.E., F.R.C.S., Mr. Michael Longridge, C.B.E., Past President of the Institution of Mechanical Engineers, and Mr. A. D. Bailey, Technical Adviser to the Ministry of Pensions.

The specification of these standard limbs has now been approved by the Advisory Council to the Ministry and Colonel Sir Lisle Webb, K.B.E., Director-General of Medical Services. In a few months all artificial legs of wood or leather supplied to pensioners will comply with the new specification. The method adopted has been to standardize the mechanism of the limb and the metal component parts, leaving the actual limb to be fitted to and assembled for the individual pensioner by the limb-maker. The latter point is of great importance, as every limb must necessarily be adapted to the individual needs of the man. Standardization is not to be allowed to interfere with progress. It is a standardization of those types of limbs which have been thoroughly and extensively tested, and of which about 35,000 have been issued. Further improvements will be made, and the types will be modified as these are tested and proved.

The Ministry has had in hand the problem of providing a lighter artificial leg made of duralumin or some similar metal instead of wood and leather, and one type of this light limb has now received the approval of the advisers. Light limbs have evident advantages for certain cases. The pattern now approved will, it is hoped, be capable of being made by an engineering firm in such a way that only the actual fitting to the man need be carried out by a skilled limb-fitter.

HONOURS.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following medical officers of the Territorial Force:—*Army Medical Service*: Colonel Creighton H. Lindsay, C.M.G., D.S.O. *Royal Army Medical Corps*: Lieut.-Colonels James F. MacIntosh, 1st Highland Field Ambulance, and Arthur E. Jerman, 4th London Field Ambulance.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a special congregation held on July 29th the honorary degree of Doctor of Laws was conferred on Dr. J. J. Abel, Professor of Pharmacology in Johns Hopkins University, and on Dr. Harvey Cushing, Professor of Surgery in Harvard University.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 29th, the President, Sir Norman Moore, Bt., being in the chair.

On the recommendation of the Censors Board it was resolved:

That Frederick Arthur Pring be declared to be no longer a Licentiate of the College, and that he forfeit all rights and privileges of a Licentiate, and that his name be removed from the list of Licentiates during the pleasure of the College.

The following appointments were announced by the President: Dr. F. Parkes Weber to deliver the new Mitchell Lecture in 1921; Dr. Arthur Whitfield the Lumleian Lecture in 1921; Dr. R. O. Moon the FitzPatrick Lectures in 1921; Dr. George Graham the Goulstonian Lectures in 1921; Dr. Thomas Lewis the Oliver-Sharpey Lecture in 1921; Dr. Gordon M. Holmes the Croonian Lectures in 1922.

A grant of £100 was made to Sir F. W. Mott from the Croonian Trust for his researches.

Dr. Eardley Lancelot Holland was admitted to the Fellowship of the College.

The following were admitted to the Membership after having passed the required examination:

Arthur Cecil Alport, M.D.Edin., Frederic Vivian Bevan-Brown, M.D.Lond., Gerrald Kessick Bowes, M.B.Oxf., Henry Cecil Herbert Bull, M.B.Camb., William Seigfried Dawson, Geoffrey Barrow Dowling, M.B.Lond., Harold Gardiner-Hill, M.B.Camb., Theo Jenner Hooper Hoskin, M.B.Camb., John Inkster, M.D.Aberd., Jack Joffe, M.B.Lond., John William McNee, M.D.Glasg., Thomas Herbert Oliver, M.D.Manch., Roland John Perkins, M.B.Lond., Joseph Harold Sheldon, M.D.Lond., George John Sophianopoules, Ambrose Thomas Stanton, M.D.Toronto, Hugh Stott, M.D.Lond., Richard James Campbell Thompson, Arthur Peregrine Thomson, M.B.Birm., Alfred Gregson Williams, M.B.Camb., Thomas Pearce Williams, M.D.Lond., Irene Yates, M.D.Lond.

Licences to practise physic were granted to eighty-five candidates who had conformed to the by-laws and regulations and passed the required examinations, and Diplomas in Public Health were granted jointly with the Royal College of Surgeons to thirty-five candidates, whose names are printed below.

The Murchison Scholarship was awarded to Rowland John Perkins, and a special award of ten guineas was made to John Vernon Cannadine Braithwaite *proxime accessit*.

The following appointments were made on the nomination of the President and Council:—*Censors*: Dr. H. W. G. Mackenzie, Sir John Rose Bradford, Sir James Galloway, Dr. John Fawcett. *Treasurer*: Sir Dyce Duckworth. *Registrar*: Dr. J. A. Ormerod. *Harveian Librarian*: Dr. T. H. Arnold Chaplin. *Library Committee*: Dr. Dawson Williams, Dr. A. F. Voelcker, Dr. Herbert R. Spencer, Dr. Raymond H. P. Crawford. *Curators of the Museum*: Dr. J. Mitchell Bruce, Sir Seymour J. Sharkey, Sir Frederick W. Andrewes, Dr. William Hunter. *Finance Committee*: Dr. Sidney P. Phillips, Dr. Arthur Templer Davies, Dr. Herbert R. Spencer.

Dr. G. E. Blacker was elected, on the nomination of the Council, a councillor to take the place of Dr. Fawcett, appointed Censor.

Fellows newly elected to any office gave their faith to the College.

Communications were received from: (1) The Secretary of the Royal College of Surgeons, reporting proceedings of the Council of that College on May 13th, June 10th, and July 8th respectively; (2) Dr. Reginald Vaughan Solly, dated June 18th, 1920, asking that the Membership resigned by him in January last may be restored to him.

The President announced that he had awarded the Bisset Hawkins medal to Dr. W. H. Hamer; and that he had nominated Sir William Hale-White to serve on a committee appointed by the Minister of Health to advise upon the control of therapeutic substances which cannot be tested by direct chemical means.

A letter was read from the Registrar of the University of Birmingham, asking the College to appoint a representative on the governing body of that University in the place of the late Dr. Samuel West. On the nomination of the President, Dr. Dawson Williams was elected to this office.

A report from Sir Humphry Rolleston and Mr. H. J. Waring, representatives of the Royal Colleges, upon their visit to the examination held at Philadelphia, May 19th–26th, 1920, by the National Board of Examiners, was received and referred to the Committee of Management. The President referred to the great value of this report.

Dr. Sidney Martin, Chairman of the Committee of Reference, presented a complete report of the proceedings of the Committee of Reference. The warmest thanks of the College were voted to Dr. Martin and to Mr. F. G. Hallett, who acted as Secretary to the Committee.

The annual report of the Cancer Research Fund was received and the thanks of the College were accorded to the Executive Committee.

A report, dated June 9th, 1920, from the representative of the College on the General Medical Council, upon the proceedings of the Council at the meeting held in May–June last was received and entered on the minutes.

A report from Sir George Savage, concerning the Chelsea Physic Garden, was received, and Sir George Savage was re-appointed a representative on the Committee of Management.

The Committee recommended that Sir Charles Ballance be appointed visitor to the examinations of the Egyptian School of Medicine for the next period of examination.

After some further formal business the President declared the Comitia closed.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on July 29th, when Sir Anthony Bowlby, President, was in the chair.

Diplomas of Membership were granted to the eighty-four candidates found qualified at the recent examinations. The names are given below under English Conjoint Board.

Mr. Evelyn Sprawson, Dental Surgeon at the London Hospital Dental School, was elected a member of the Board of Examiners in Dental Surgery.

With regard to the Primary Examination for the Fellowship, it was resolved that in future the paper of four questions be set in anatomy, and the paper of six questions in physiology, four of which in the latter subject must be answered.

The College, Bishop's Stortford, and Victoria Institute, Worcester, were added to the list of institutions for instruction in chemistry and physics already recognized.

The Lister Memorial Fund.

The following letter was read from the honorary secretary of the Lister Memorial Fund:

The Royal Society,
Burlington House, W.1.

I am directed by the Executive Committee of the Lister Memorial Fund to ask whether the Royal College of Surgeons of England would be prepared to become Trustees and Administrators of the Lister Memorial Fund. If they would be willing to do this, it is proposed that they should have the entire administration of the Trust subject to the following provisions:

1. That out of the General Fund a sum of £500, together with a bronze medal, be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgical science, the recipient being required to give an Address in London under the auspices of the Royal College of Surgeons.
2. That the award be made by a Committee constituted as follows:

   Two members nominated by the Royal Society.
   Two members nominated by the Royal College of Surgeons of England.
   One member nominated by the Royal College of Surgeons in Ireland.
   One member nominated by the University of Edinburgh.
   One member nominated by the University of Glasgow.

3. That any surplus income of the General Fund, after providing for the erection of a monument, and after defraying administrative expenses, be either devoted to the furtherance of surgical science by means of grants or be invested to increase the capital of the Fund.

A letter of July 21st was read from the Honorary Secretary, Sir John Rose Bradford, reporting the transference of stocks into the name of "The Royal College of Surgeons of England" in pursuance of the undertaking of the College to become the Trustees and Administrators of the Lister Memorial Fund.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the following successful candidates at the final examinations:

A. N. Aitken, H. S. Baker, W. J. Birchall, S. Blackman, T. L. Bonar, J. P. Brown, G. N. Campey, L. E. R. Carroll, G. W. Cheater, H. S. Cohen, Sarah A. Cooper, D. Crawford, J. W. Crawshaw, F. W. Crook, K. V. Deakin, S. N. Deboo, G. C. J. A. de Rynck, W. D. Doherty, T. A. J. Duff, R. S. Fawssett, S. Flanagan, Ada M. Freeman, Blanche S. Gardner, A. D. Gill, C. I. C. Gill, Doris E. F. Goodall, E. E. D. Gray, Hilda T. Haggett, Gertrude E. Harre, H. A. Harris, F. Heber, L. W. Hefferman, Sylvia K. Hickson, G. F. W. Howorth, H. V. Jackson, F. J. Jauch, Marjorie M. Jefferson, Doris E. P. Jolly, S. G. Jones, Dorothy

M. Kemp, A. W. Kirkham, J. N. Laing, P. T. Liang, L. C. E. Lindon, H. A. Lomax, Mary A. McHugh, G. J. W. McMichael, B. T. McRae, Dora Mason, W. F. Matthews, L. B. Maxwell, D. G. F. Moore, Eva Morton, L. Moss, Annie A. Muir, B. P. Nanavati, C. W. Narbeth, D. J. P. O'Meara, R. Y. Paton, P. H. Perera, J. Posner, G. H. Potter, M. R. Rana, G. K. Reeves, M. H. Renall, E. L. Robert, L. C. Rogers, W. R. Sadler, J. A. P. Shaw, G. Sheehan, F. D. Spencer, A. DaC. Stoute, P. W. Symons, H. Tomlinson, B. M. Tonkin, M. Tree, Edith H. Trimmer, N. S. B. Vinter, R. P. Wanless, Helena J. Webster, C. H. Whittle, Dorothea C. Wigfield, W. R. Williams, S. Wright, C. R. Young.

The Diploma in Public Health has been granted to the following thirty-five successful candidates:

L. Anderson, K. M. Bharucha, G. T. Calthrop, A. S. Cane, T. P. Cole, Delphine G. D'Abreu, C. E. Dukes, R. O. Eades, H. A. Fawcett, H. J. B. Fry, A. R. Fuller, A. H. Habgood, R. N. Hunter, J. H. Jordan, J. du P. Langrische, E. R. Lovell, H. C. Lucey, J. M. Mackintosh, C. A. Mason, E. W. Matthews, W. J. Moir, F. N. Moos, D. S. Page, W. Parker, Parmanand, A. B. Porteous, W. B. Purchase, M. Radford, R. W. Revell, F. E. Roberts, A. B. Rosher, H. Stott, W. R. Taylor, J. N. Webb, A. J. Wernet.

CONJOINT BOARD IN SCOTLAND.

THE following candidates, having passed the Final Examination, have been admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

G. Green, J. S. Durward, Muriel Keyes, W. E. de Silva, W. Barton, B. Belilovsky, F. J. Stevenson, Jessie H. Crawford, Agnes M. Hill, K. Ponniah, A. Gold, A. H. Jacobs, F. A. Smorfitt, Jessie M. L. Wright, P. C. H. Homer, S. S. Sumner, W. M'Mullan, I. Goldberg, O. Brunlees, D. C. Scotland, T. Poole, J. M'Glashan, J. Stevenson, May C. Boughton-Leigh, T. Hardie, T. A. du Toit.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—A. B. Clery, A. B. Doyle, W. R. Elmes, B. Epstein, J. O'C. Fitzsimons, J. Green, Z. Green, T. P. Heffernan, G. A. Henderson, Margaret Holliday, W. Horgan, Mary J. C. King, T. Lynch, J. F. Lyne, J. S. E. Manley, F. J. O'Donnell, W. P. Reynolds, T. J. Ryan, A. Stafford, Margaret Toher.

D.P.H.—Dr. T. Buckley, Dr. A. Humphreys, Dr. G. C. F. Roe, Dr. J. E. J. Roche-Kelly, Dr. M. Shipsey, Dr. V. Wallace.

Medical News.

THE Second International Congress of Comparative Pathology will be held at Rome in the spring of 1921 under the presidency of Professor Perroncito. Communications should be sent to the secretary, Professor Mario Tevi Della Vida, Via Palermo 58, Roma.

DR. NOEL BARDSWELL, medical adviser to the London Insurance Committee, has been awarded the Médaille de la Reconnaissance Française (bronze) for services rendered in Paris in connexion with the treatment of the tuberculous French soldier and the establishment of an agricultural training colony at Epinay, near Paris.

DR. GEORGE ST. GEORGE, of Lisburn, co. Antrim, Provincial Grand Lodge Inspector, Antrim, has received from the members of the lodges under his supervision an address, the Jewel of the 32nd degree, and the certificates of an endowed chair in each of the Masonic charities as a mark of appreciation of his many virtues "as a man and a Freemason" of fifty years' standing.

AN emergency grant of £4,000 from King Edward's Hospital Fund for London and an extension of the principle of payments by patients have enabled the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., to maintain the greater part of the work of the institution.

A JOINT conference on work for invalid and crippled children will be held by the Invalid Children's Aid Association and the Central Committee for the Care of Cripples on Tuesday and Wednesday, November 16th and 17th, in the Council Chamber of the Guildhall, London. The subjects for discussion include the bearing of recent legislation on work for physically defective children, co-operation between the State and voluntary bodies, accounts of existing institutions in America, on the Continent, and in the United Kingdom for the treatment and education of these children, and the scheme for future development suggested by the Central Committee for the Care of Cripples. Further particulars may be obtained from the Conference Secretary, Central Committee for Care of Cripples, 20, Berkeley Street, W. The chairman of the committee is Sir Robert Jones.

AT the June matriculation examination of the University of London there were 176 successful candidates in the first division and 1,044 in the second division.

THE well known Italian surgeon, Professor Edoardo Bassini, has recently resigned his professorial duties and retired from practice.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

A. W. W., in common with several local practitioners, has received a communication from the inspector of taxes suggesting that for current and future years one-third of the rent and similar expenses should be deducted for income tax purposes "because the surgery often forms such a small part of a doctor's house."

*** The inspector in question does not seem to give sufficient weight to (*a*) the other convenience which a doctor's residence must provide if the practice is to be properly carried on—for example, accessibility, implying payment for a central site, garage for motor car, waiting room or rooms, dispensary, kitchen for supply of hot water and for washing appliances, etc., and for the adaptation of other rooms in the house for professional or semi-professional purposes; and (*b*) to the fact that by far the more valuable portion of any residence is that on the ground floor, where the waiting-room and surgery are situated. This is a matter to which attention was drawn by Dr. Haslip in the evidence he gave on behalf of the British Medical Association before the Royal Commission on Income Tax. The report of the Royal Commission stated that "the general limitation to a sum not exceeding two-thirds of the annual value or rent should be retained, but the Commissioners should be empowered to grant a larger allowance in special circumstances where the application of the general rule would result in hardship." It has to be remembered that two-thirds is at present the *maximum* allowance; the normal allowance in the smaller provincial towns should, in our opinion, be at least one-half. In the case of our correspondent, his rent is £75, and to leave only one-third—that is, £25—to represent his private share seems hardly reasonable; if he were a member of some other profession with a distinctively professional office apart from his house, he would presumably have to pay more than £25 to obtain the same domestic conveniences.

C. N. L. inquires as to the allowance he is entitled to for the cost of replacement of a motor car in the following circumstances:

Bought a motor car before the war for	£360
Sold it in 1919 for	£180
Bought a new Ford in February, 1920, for ...	£280

*** The net cost of the new Ford was £280 less £180 (received for the old car)—that is, £100—and he is entitled to charge that amount as a professional expense of the year in which the purchase was made, and not to deduct that amount from the average profit. It is true that if the three years' average is abolished next near and the basis of the previous year adopted, he might lose the full effect of the allowance for renewal; but on the other hand—assuming that the recommendations of the recent Royal Commission are adopted—he would then become entitled to an annual allowance by way of depreciation.

TOBACCO TREMOR.

"A. B." finds that even moderate smoking (whether pipe, cigar, or cigarette) makes his hands very shaky, especially just afterwards (probably circulatory). He would be grateful to anyone who could tell him how to counteract this without giving up tobacco altogether; he is aware that the latter would be the counsel of perfection. He is a moderate smoker—about two ounces a week—and almost an abstainer from alcohol, which has never been taken at any time other than in strict moderation. The tendency to this shakiness has existed since student days. He is now about 50, and otherwise healthy.

DEPILATORIES.

"IGNOTUS" writes: I have a female patient, aged 26 years, who is much troubled with growth of hair on upper lip and chin. She has tried various remedies, but none are successful in permanently removing the hair.

*** The only satisfactory method of removing hair from the upper lip is by electrolysis. This method has certain drawbacks; a slight degree of scarring is probable, even when the treatment has been properly carried out. Also, a certain percentage of hairs will return, at a later date. In some cases where there is no very marked growth, the unsightly condition may be partly disguised by bleaching the hair with peroxide of hydrogen. Depilatory powders should be discouraged, as they are apt to cause irritation of the skin, and are only a form of shaving.

LETTERS, NOTES, ETC.

TENNIS ELBOW.

DR. JAMES B. MENNELL (London, W.) writes: Mr. E. Muirhead Little's reply to Dr. John G. Havelock's query on this subject in your issue of July 31st was of considerable interest. May I be allowed a short space to supplement it? Reference to treatment rather than to pathology of this and similar injuries will be found in several books other than those mentioned, all works on physical therapeutics, and, unfortunately, not in surgical textbooks. These, as a rule, pass over the treatment of minor injuries in a manner which implies that they are too trivial to merit serious consideration. The result is that comparatively few medical men are acquainted with the technique of their treatment; and the sufferers, wearying of prolonged disability—trivial though it may be—seek relief from the "bonesetter," and often secure it. For many injuries of this nature Wharton Hood's dictum "rub and strap," and then continue to use, often represents the wisest form of treatment. Graduated faradic contraction with a Smart-Bristow coil will generally expedite recovery, and, in cases of some standing, will often be found to present the only means by which the victim can be restored to participation in his favourite game. In many chronic cases even this will not prove adequate and manipulation under anaesthesia may be an essential preliminary to other forms of treatment. In all cases massage is a useful adjunct, but to treat any injury of this type by massage alone is sheer waste of time. Graduated exercises should, however, form an integral part of treatment. Three to six weeks should suffice to restore ability to play again in most cases, provided that osteo-arthritic change is not at the root of the trouble. The pathology of "tennis elbow" is a matter for speculation. Sometimes the symptoms appear to be due to a traumatic arthritis of the superior radio-ulnar joint, but more frequently to the rupture of a few fibres of one of the muscles in the neighbourhood. The last case I saw was unusual: the anconeus appeared to have been severely lacerated. There are countless injuries of similar character, the bowler's side and shoulder, the rider's strain, the golfer's shoulder and wrist, the jumper's calf, and the fisherman's wrist and elbow furnish sufficient examples. There are many more. Prognosis depends on the injury; if it is extra-articular the prognosis should invariably be good, provided that the injured part has not been immobilized. Rigid fixation is inimical to rapidity of recovery; graduated use is curative. When the injury is in the shoulder region, a lesion of the deltoid (granted adequate treatment) offers a good prognosis, but we should be progressively more guarded when dealing with laceration of the supraspinatus, the infraspinatus, and the subscapularis. In America the pitcher's shoulder is regarded with great misgiving. It is due, I believe, to rupture of the tendon of the supraspinatus at its insertion. Were the use of graduated faradic contraction more fully appreciated "on the other side," it is probable that the prognosis would not be so gloomy.

DR. T. D. LUKE (Peebles) writes: Like your correspondent, I have been struck with the paucity of literature on tennis elbow. I recall as a student seeing in one of the anatomy textbooks it was due to a sprain or over-use of pronator radii teres. The exact location of the most painful spot in cases casts some doubt on this, and would suggest a lesion of some ligamentary attachment, as Mr. Little remarks. Naturally different subjects are affected differently, just as two players employ different styles or strokes. I had a patient with this affection in April last—a very active man of 45. I, of course, prescribed *rest*, heat and massage locally, with occasional sweatings. The patient took all the treatment except the *rest*; he curled for hours (on artificial ice) almost daily in certain competitions, and, strange to say, got better!

FUTURE PROVISION OF MEDICAL SERVICES.

DR. S. J. ROSS (Bedford), in the course of a communication deprecating the publication of a letter under this heading in the JOURNAL of July 3rd, p. 29, writes: "In the supreme struggle which awaits us the advice given by all thinking members of the profession is 'Sink your petty grievances and present a united front.' Therefore I was surprised to read a letter from a colleague making certain charges against the panel doctors as a whole, and further, a reply to the charges by another colleague, which appeared in the JOURNAL of July 31st. We must remember that this JOURNAL is read not only by medical men but by laymen, and there are certain laymen who would gladly seize upon the statements made by Dr. Traylen as clear proof of the failure of the panel system and the desirability of starting a State medical service. Dr. Traylen's letter is an insult to all panel doctors, and therefore to the whole profession. His statements are not even supported by an iota of proof." Dr. Ross adds that he is not now a member of the panel, and therefore writes without bias.

TREATMENT OF CANCER.

"URINOLOGIST" writes: I am especially interested in the question how far I can by an examination of a sample of urine obtain evidence of cancer or of a cancer diathesis or dyscrasia. This question concerns every practitioner, and Dr. Blair Bell (June 12th, p. 787) has expressed himself positively with respect to the necessity of taking dilute hydrochloric acid for a lifetime, after a radical operation for cancer. Joulie expresses himself just as clearly with respect to phosphoric acid. In every case of cancer examined by him the urine was "hypoacide." So Gautrelet in his classification of urines says: "If the urosemeiological curve reveals a lowering of the whole of the fixed elements, with a lowering more especially of acidity and urea, it is question of a cancerous diathesis." Dr. Blair Bell says that "in so long a period as ten years after operation hydrochloric acid has still been absent from the stomach." I surmise without return of cancer and without persistent treatment by hydrochloric acid during ten years. Again, Dr. Elsie Royle in her special work on the urine in malignant diseases, says there is a decreased excretion of phosphates in the urine. Personally, I am interested in the question of the diagnosis of cancer from a simple examination of the urine, as regards acidity and salt, which actually or relatively should alone give a clue to a constant absence of hydrochloric acid in the stomach, wherever the disease is situated. Although the chlorides of the urine at present will not alone afford us the knowledge whether they have been dissociated into acids in their passage through the body, it may be that a few "conative" facts as to salt and acid conditions could afford us a greater certainty in the diagnosis of malignancy in perhaps all its stages. Perhaps some physiologist could tell us how far the stimulation of the vagus which increases the gastric juice affects the condition of its acid constituents.

CORRECTION.

WE regret that in our account (at p. 184) of the opening of the new laboratory at the Liverpool School of Tropical Medicine, on July 24th, the name of the late Dr. Albert Chalmers was misspelt. On that occasion Mrs. Chalmers was awarded a Mary Kingsley Memorial medal in recognition of the work of her husband, the late Dr. A. J. Chalmers, a distinguished Liverpool University graduate, who died this year in Calcutta. An obituary notice appeared in the JOURNAL of May 8th, p. 657.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 35, 36, 37, and 38 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 33, 34, and 35.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	9	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.